THE REPORT

OF THE

PRESIDENT

OF

QUEEN'S COLLEGE, BELFAST,

FOR

THE YEAR ENDING 31st JULY, 1869.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEXANDER THOM, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.
1870.

[C.—86.] *Price 8d.*

CONTENTS.

Page

REPORT, ... 3

APPENDIX—

1. Queen's College, Belfast, and Queen's University, ... 9
2. Return of the Number of Students attending each Class in the Queen's College, Belfast, in each Year, ... 12
3. Return of the Amount of Fees received by each Professor in the Queen's College, Belfast, in each Year, . . . 14,15
4. Account of the Expenditure of one Year's Additional Grant to the Queen's College, Belfast, ending 31st March, 1868, . 14,15
5. General Class Examinations, Queen's College, Belfast, 1867-68, 1868-69, ... 17
6. Return of the Number of Lectures delivered by each Professor in the Queen's College, Belfast, in each Year, . . . 18
    October Examinations of Queen's College, Belfast, 1869, . 20
    Hours of Lectures, Queen's College, Belfast, for Session 1868-69, ... 22
7. An Enlarged Digest of Subjects and Courses pursued in Queen's College, Belfast, ... 24
8. General Class Examination at the end of the Session 1867-68, . 33
    Matriculation Examination, October, 1868, . . . 80
    Scholarship Examinations, October, 1868, ... 82

THE REPORT

OF THE

PRESIDENT OF QUEEN'S COLLEGE, BELFAST,

FOR

THE YEAR ENDING 31ST JULY, 1869.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

I have the honour of presenting to your Majesty my Report respecting the condition of this College during the year ending the 31st of July, 1869. Before submitting the statistics of last Session, as twenty years have now elapsed since the inauguration of the College, I beg permission to record the progress it has made during that period. The entire number of separate students who entered, studied, and qualified in this College since its opening at the beginning of the Session 1849–50 amounts to 2,072. Of these 854 appeared on the rolls during the first ten years of the existence, and 1,218 during the last ten Sessions, showing an increase during this latter period, as compared with the former, of 364 distinct entries. The increase in the number of matriculated students, as contrasted with the non-matriculated, during the past twenty years is well worthy of notice, as indicating satisfactory University progression. Of the 854 students who attended in the first ten years, 461 were matriculated, and 393 non-matriculated; whilst of the 1,218 who prosecuted their courses during the latter ten, 960 were matriculated, and 258 non-matriculated. As matriculation forms the groundwork for graduation in the Queen's University and other Universities, and implies a full collegiate curriculum, this result is gratifying and important.

During the last Session, to which this Report more especially refers, 368 students were in attendance in the different departments of Arts, Law, and Medicine, 330 being matriculated, and 38 non-matriculated. Of these latter 22 belong to the Medical School. At the beginning of the Session 103 students entered College for the first time.

The Tables I., II., III., IV., given in the Appendix, show the numbers and religious persuasions of students who attended Lectures in each Session since the opening of the College, the numbers and persuasions of those who entered in each year, the numbers who attended the Lectures of each Professor in each year, and the number of Medical men in attendance in each Session.

Regarding the great body of the students of last Session I have much satisfaction in placing on record my high approbation of their conduct, attention, industry, and success. The unwearied efforts of many of them to acquire knowledge and perfectly to prepare themselves for their professions and the intellectual conflicts that await them deserve special commendation. The cases brought under my notice of a want of diligence or of any violation of the discipline of the College were comparatively few, and none of them were so serious as to require investigation on the part of the Council.

In referring to the general progress of the College I cannot overlook the remarkable success many of its students have achieved through the system of competitive examinations, now happily established for the different public departments. From the very introduction of that system this College has asserted a position which made its Professors and students known throughout the empire. In every department, Civil, Military, Medical, and Naval, the Belfast students have carried distinguished places and obtained valuable awards. In the first year of competition for Indian Cadetships, of the twelve vacancies then existing, the first, the fourth, and tenth were won by students of this College; and, though I am unable to furnish a perfect list of those who since that period have been successful, it affords me pleasure to embody here the following return which the Registrar submitted to the Court of Visitors at their last meeting in this College during the past Session:—

> "We do not keep a record in the College of the after success of our students; but, so far as the details state which have reached the Secretary of the Queen's University, and are published in the calendar, we have furnished from among the young men educated within these walls:—8 members of the Consular Service, 17 members of the Civil Service of India, 8 engineers of public works in India, a member of the Geological Survey of India, 2 members of the Medical Service of India, 27 members of the Army Medical Service, 12 members of the Navy Medical Service, a Secretary to the Chinese Embassy, an Inspector-General of Customs in China, several officers to the Royal Engineers, 10 Professors of Colleges and Universities, several assistants to Professors, 4 head masters of Collegiate and Academical institutions, 4 Inspectors of National schools, 3 Barrington Lecturers, 2 members of the Senate of the Queen's University; and the ranks of Revising Barristers, Dispensary Doctors, Hospital Surgeons, and Law students of Inn's of Court have been recruited from our students, most of the appointments having been made after severe competitive examinations."

In the learned professions many of the students of this College continue, both at home and abroad, to distinguish themselves most honourably, reaping the rewards that flow from a sound education and proper mental culture.

The subjoined tabular returns will present a condensed view of the condition of the College from the date of its inauguration in 1849–50 to the close of this Session.

I.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS attending Lectures in QUEEN'S COLLEGE, BELFAST, in each Session from its opening.

SESSIONS.	Matriculated.	Non-Matriculated.	Total.	Established Church.	Roman Catholic.	Presbyterian.	Methodist.	Independent.	Various.	Total.
1849–50, . .	90	105	195	83	5	145	4	1	7	195
1850–51, . .	110	75	185	33	10	136	4	1	1	185
1851–52, . .	120	69	189	40	14	129	5	–	1	189
1852–53, . .	101	53	154	33	15	100	4	–	2	154
1853–54, . .	114	54	168	36	14	107	6	–	5	168
1854–55, . .	118	65	183	34	14	131	3	–	1	183
1855–56, . .	119	74	193	33	19	131	5	2	3	193
1856–57, . .	136	58	194	35	14	131	3	2	9	194
1857–58, . .	153	54	207	31	14	154	4	1	3	207
1858–59, . .	160	63	223	45	14	153	8	2	1	223
Average, .	122·1	67	189·1	35·3	13·8	131·7	4·6	·9	3·3	189·1
1859–60, . .	199	58	257	43	16	184	8	2	4	257
1860–61, . .	239	73	312	57	22	216	7	–	10	312
1861–62, . .	299	76	375	59	17	266	13	4	16	375
1862–63, . .	335	53	388	61	24	275	11	3	14	388
1863–64, . .	340	47	387	63	26	261	10	3	24	387
1864–65, . .	356	49	405	58	22	285	9	1	30	405
1865–66, . .	360	53	413	60	19	281	13	2	38	413
1866–67, . .	357	30	387	57	19	225	18	1	67	387
1867–68, . .	357	33	390	59	16	233	25	2	55	390
1868–69, . .	330	38	368	51	15	220	26	2	54	368
Average, .	317·2	51	368·2	56·8	19·6	244·6	14·0	2·0	31·2	368·2

II.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS who have entered QUEEN'S COLLEGE, BELFAST, in each year since its opening.

SESSIONS.	Matriculated.	Non-Matriculated.	Total.	Established Church.	Roman Catholic.	Presbyterian.	Methodist.	Independent.	Various.	Total.
1849–50, . .	90	105	195	33	5	145	4	1	7	195
1850–51, . .	51	42	93	15	7	68	1	–	2	93
1851–52, . .	42	40	82	25	7	47	2	–	1	82
1852–53, . .	31	23	54	16	7	28	2	–	1	54
1853–54, . .	39	23	62	14	5	36	3	–	4	62
1854–55, . .	41	38	79	13	6	56	2	–	2	79
1855–56, . .	33	29	62	17	5	36	2	2	–	62
1856–57, . .	40	28	68	18	4	40	1	–	5	68
1857–58, . .	43	28	71	8	6	55	2	–	–	71
1858–59, . .	51	37	88	24	8	51	4	1	–	88
	461	393	854	183	60	562	23	4	22	854
1859–60, . .	66	24	90	14	6	64	4	–	2	90
1860–61, . .	96	41	137	29	13	85	3	–	7	137
1861–62, . .	114	38	152	27	5	181	6	3	10	152
1862–63, . .	115	22	137	23	12	92	5	–	5	137
1863–64, . .	109	18	127	25	5	86	3	1	7	127
1864–65, . .	108	27	135	22	6	97	3	–	7	135
1865–66, . .	88	30	118	17	7	83	5	–	6	118
1866–67, . .	95	12	107	16	6	61	10	–	14	187
1867–68, . .	90	22	112	20	5	63	1	1	22	112
1868–69, . .	79	24	103	16	7	60	6	2	12	103
	960	258	1,218	209	72	792	46	7	92	1,218
	1,421	651	2,072	392	132	1,354	69	11	114	2,072

---

* Of the 649 who entered as non-matriculated Students, 121 afterwards passed a matriculation examination. The College Register contains 1,541 matriculated and 528 non-matriculated, in all 2,069 students.

III.—Return showing the Number of Students attending the Lectures of each Professor in each year since the opening of the College.

Professor of	1849-50.	1850-51.	1851-52.	1852-53.	1853-54.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.	1867-68.	1868-69.
Greek,	71	74	46	28	83	38	43	36	44	50	77	100	140	157	120	133	118	74	73	75
Latin,	68	72	44	25	32	35	40	29	44	54	72	84	139	149	118	118	112	96	86	89
Mathematics,	86	70	51	38	42	44	45	52	85	62	78	96	106	122	111	113	98	80	84	97
English,	52	48	53	35	44	44	51	48	86	65	75	100	116	136	125	128	115	102	91	91
Modern Languages,	62	56	41	31	34	63	43	52	56	63	78	180	177	150	125	146	151	150	142	126
Celtic,	The Lectures open to the public.														Vacant.					
Natural Philosophy,	48	43	81	29	46	55	55	37	48	54	46	95	95	104	108	102	116	113	108	149
Natural History,	12	48	75	52	56	68	58	69	62	87	84	77	77	88	112	121	101	97	118	105
Mineralogy,	–	6	14	13	15	13	8	20	13	11	16									
Logic and Metaphysics,	3	–	45	33	44	46	43	51	46	54	44	79	106	114	103	91	118	101	81	81
Chemistry,	40	56	75	58	62	70	60	76	68	88	99	82	106	101	104	122	104	127	123	122
Engineering,	10	13	15	8	12	12	8	17	16	11	16	14	16	25	30	31	29	27	24	28
Agriculture and Medical Jurisprudence,	18	21	24	14	22	17	16	20	25	22	27	21	24	22	– 25	– 30	– 30	– 35	– 38	– 38
Anatomy,	35	44	55	61	53	63	65	46	52	69	81	101	107	105	114	132	138	153	158	187
Medicine,	9	17	17	12	15	18	33	27	19	22	29	25	42	27	36	44	48	67	69	67
Surgery,	24	15	26	29	28	38	40	32	30	29	39	51	53	54	47	50	55	77	79	75
Midwifery,	14	10	12	16	17	18	24	18	7	17	14	26	36	22	34	19	23	36	37	48
Materia Medica,	11	14	16	17	17	23	25	11	18	22	27	35	38	37	29	38	47	47	48	46
English Law,	17	16	17	15	11	15	10	14	12	13	11	16	14	12	12	14	19	13	20	17
Jurisprudence,	11	11	23	10	19	11	15	13	27	20	23	19	20	29	27	31	34	28	24	29

This return is given more fully in detail in the Appendix, pp. 14, 15

The return of Lectures delivered in each Season appears in pp 20, 21 of the Appendix.

IV.—RETURN of the Number of Medical Students in attendance in each Session.

Session	Matriculated.	Non-Matriculated.	Total.	Session.	Matriculated.	Non-Matriculated.	Total.
1849–50,	28	27	55	1859–60,	56	39	95
1850–51,	20	35	55	1860–61,	70	46	116
1851–52,	25	39	64	1861–62,	81	48	129
1852–53,	29	33	62	1862–63,	89	33	122
1853–54,	29	37	66	1863–64,	110	33	143
1854–55,	39	36	75	1864–65,	126	25	151
1855–56,	33	48	81	1865–66,	130	29	159
1856–57,	36	25	61	1866–67,	157	17	174
1857–58,	35	32	67	1867–68,	163	18	181
1858–59,	45	34	79	1868–69,	150	24	174

The above return of Medical Students in attendance during the past Session, viz., of 150 matriculated and 24 non-matriculated, affords most gratifying proof of the flourishing condition of a department so important in all its relationships to the community at large. This great success may be attributed to various causes, and amongst others to the opportunities presented by the General Hospital of Belfast for the study of Surgery and Medicine, as well as to the existence of the admirable Anatomical Rooms lately added to the Collegiate Buildings, through the Parliamentary Grants so wisely sanctioned by the Lords of your Majesty's Treasury.

The new Library, another building recently erected here at the public expense, is now affording both to Professors and Students very important advantages. That building also is perfectly adapted to the intended purpose, and affords great relief to the College generally, by supplying a want that existed all along.

I cannot omit once more expressing my most earnest desire and hope that an increased grant for the steady supply of books to the Library, may be made through the sanction of your Majesty's Ministers, in order to restore to the Annual Grant for the maintenance of the College the amount that was appropriated some years ago to assist in augmenting the salaries of the Professors. The sum thus subtracted was no doubt applied to a most necessary purpose; but I have always lamented that this could not have been effected without trenching on an allowance so essentially necessary to found and extend a Library suited to the progress of Science, Literature, and Art, and adapted to the requirements of a College embracing so many departments. The desirable object of the establishment of a thoroughly equipped Library furnishing books for consultation and loan to so large a number of Professors and Students, a permanent repository of knowledge, suited to and worthy of this great centre of intelligence and industry, I trust to see speedily accomplished.

The great principle of united education, on which this College with its sister Institutions of Cork and Galway was founded, has been fairly and most successfully tested within these walls. From the condition of the population and of the various Churches in Ulster, and also from the existence of other Colleges adapted more directly to the wants of different portions and sections of the community, it is natural that a large proportion of the Students here should be Presbyterians; but as the principle of united instruction opens the halls, honors, and privileges of the College equally to all, so the Professors and Students of diversified creeds continue to mingle here in the utmost harmony and concord. Rivalry does exist,—on the part of the distinguished Professors to prepare their Students of every Church for the various walks of the public service; and,—on the part of the Students to excel one another in obtaining the honourable rewards of moral and intellectual superiority. From the foundation of this College friendships have been formed amongst young men of different creeds, of which I receive constant evidence in tracing the history of many former students, whether of those adorning their professions at home, or of others filling public posts abroad with ability and success.

At a Visitation of this College held in April last (the Lord Primate being in the chair) the Deans of Residences—viz., the Rev. Dr. Porter, the Rev. Mr. Hoare, the Rev. William Arthur, and the Rev. John Porter, gave to the Visitors satisfactory returns regarding the conduct of the Students placed under their spiritual supervision. I am still of opinion that the law regulating the powers and duties of the Deans of Residences requires some modification and extension, fully to carry out its objects and intention.

The calendar of the Queen's University in Ireland, which is annually presented to your Majesty, continues to record the proceedings of that body in granting degrees to the Students of the Queen's Colleges, in Arts, Law, Medicine, and Engineering, and in awarding the various University Exhibitions and Prizes in connexion with the examinations for its degrees and diplomas. The success of the University itself, the steady and rapid increase of its graduates, the keen struggles amongst the students of the three Colleges for Exhibitions and intellectual rewards—the lists of men yearly presented at the conferring of the degrees in Dublin who have carried places of distinction in the competitive examinations now so happily established, are all well worthy of consideration. I will only remark that whilst the graduates of the other Colleges nobly do their duty, those of this College do not fail to add their full share to the general and gratifying success.

All the statistical returns of this College for the past year will be found embraced in the extended Appendix which I subjoin. In addition to the accounts of the income and expenditure of the College as they are presented and vouched to the Treasury, I always think it useful to publish yearly an enlarged digest of the subjects and courses pursued in the College, and also the papers used at the General Class Examination at the end of each Session, with those employed at the Matriculation and Scholarship Examinations, as they appear annually in the calendar, issued under the sanction of the College Council.

All of which is testified on behalf of this College by your Majesty's most dutiful servant,

P. SHULDHAM HENRY.

QUEEN'S COLLEGE, BELFAST,
12th February, 1870.

APPENDIX.

APPENDIX, No. 1.

Queen's College, Belfast, and Queen's University.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

The College is a Corporation under the name and style of "Queen's College Belfast." It was founded under the provisions of the Act 8 & 9 Victoria, cap. 66, intituled "An Act to enable Her Majesty to endow new Colleges for the Advancement of Learning in Ireland." Under the powers given by this Act, it was determined to found three Colleges. Belfast, Cork, and Galway, were selected as the sites of these Colleges, and on the 30th day of December, 1845, letters patent were issued, incorporating them. The Presidents and Vice-Presidents of the three Colleges were formed into a Board, called "The Board of Queen's Colleges," for the purpose of drawing up the statutes and arranging the system of education to be pursued in them.

On the 4th of August, 1849, the Professors were appointed, and the Colleges opened for the reception of students on the 30th October, in the same year.

Letters patent, constituting the statutes, were issued on the 11th of December, 1849, and a further charter was issued in the year 1863.

The Council of the College.

The President.
The Vice-President.
P. Redfern, M.D., Professor of Anatomy.
J. Purser, M.A., Professor of Mathematics.
W. Nesbitt, M.A., Professor of Latin.
J. Cuming, M.D., Professor of Medicine.
C. MacDouall, LL.D., Professor of Greek.
James Thomson, A.M., Professor of Civil Engineering.

Professors.

The Greek Language, . .	Charles MacDouall, LL.D., M.R.A.S.
The Latin Language, . .	William Nesbitt, M.A.
History and English Literature,	Charles Duke Yonge, B.A. Oxon.
Modern Languages, . .	A. L. Meissner, PH.D.
Mathematics, . . .	John Purser, M.A., M.R.I.A.
Natural Philosophy, . .	Joseph David Everett, M.A., D.C.L.
Chemistry, ...	Thomas Andrews, M.D., F.R.S., M.R.I.A.
Natural History, . . .	Wyville Thomson, LL.D., F.R.S.
Logic and Metaphysics, .	John Park, M.A.
Civil Engineering, . .	James Thomson, M.A., M.I.C.E.I.
Agriculture, ...	John F. Hodges, M.D., F.C.S.
Anatomy and Physiology, .	Peter Redfern, M.D. Lond., F.R.C.S.
Practice of Medicine, . .	James Cuming, M.D.
Practice of Surgery, . .	Alexander Gordon, M.D.
Materia Medica, . . .	James Seaton Reid, M.D.
Midwifery, ...	R. F. Dill, M.D.
English Law, ...	Echlin Molyneux, A.M.
Jurisprudence and Political Economy, . . .	T. E. Cliffe Leslie, LL.B.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

OFFICE BEARERS.

Curator of Museum,	The Professor of Min., Geo., and Nat. Hist.
Registrar,	Rev. Richard Oulton, B.D.
Librarian,	Rev. George Hill.
Bursar,	Alexander Dickey, Esq.

DEANS OF RESIDENCES.

United Church of England and Ireland,	Rev. Edward N. Hoare, A.B.
General Assembly of the Presbyterian Church in Ireland,	Rev. Josias Leslie Porter, D.D., LL.D.
Irish Association of Non-Subscribing Presbyterians,	Rev. John Porter.
Wesleyan Methodists,	Rev. William Arthur, M.A.

The students of the College are either Matriculated or Non-matriculated. All the courses for Matriculated students in Arts, including the Department of Civil Engineering, and also in the Faculties of Medicine and of Law, will be found in the Calendar, which is published annually.

Non-matriculated students, on paying the regulated class fees, and signing an engagement to observe order and discipline in the College, are permitted, without undergoing a preliminary examination, to attend any separate course or courses of Lectures; but are not permitted to become candidates for Scholarships or Prizes, or to enjoy other privileges of the Matriculated students.

Students in any of the Faculties can be admitted *ad eundem* from the other Queen's Colleges, or from any University capable of granting degrees.

COLLEGIATE SCHOLARSHIPS.

In the FACULTY OF ARTS—30 Junior Scholarships, of £24 each, are awarded to Undergraduates—15 for proficiency in Literature, and 15 for proficiency in Science; also, 8 Senior Scholarships, of £40 each, to Graduates, one being limited to students who have also completed the course for the degree of LL.B.; and 5 Scholarships, of £20 each, to Engineering Students.

In the FACULTY OF MEDICINE—8 Junior Scholarships, of £25 each, are awarded.

In the FACULTY OF LAW—3 Junior Scholarships, of £20 each, are awarded.

SCHOLARSHIPS AWARDED IN THE SEVERAL FACULTIES, 1867–68.

8 Senior Scholarships awarded.
21 Junior Scholarships in Arts awarded.
5 Engineering Scholarships.
6 Medical Scholarships.
3 Law Scholarships.

1868–69.

8 Senior Scholarships awarded.
19 Junior Scholarships in Arts awarded.
5 Engineering Scholarships.
8 Medical Scholarships.
8 Law Scholarships.

By an order of Her Majesty in Council, of 21st May, 1855, applying to the Civil Service, it is ordained that "every person nominated to a junior situation should obtain a certificate of qualification before entering on his duties." The ordinary classes in Queen's College embrace the branches required in the Examinations for the Civil Service, and also in the Examination for students intending to become candidates for commissions in the Royal Artillery and Engineers, and for appointments to the Civil Service of India, both of which are now thrown open to public competition.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

QUEEN'S UNIVERSITY IN IRELAND.

The charter founding the Queen's University in Ireland received the Royal sanction in the year 1850, and it provides that its Senate should have the power of conferring upon the students of the Queen's Colleges of Belfast, Cork, and Galway, such degrees and distinctions, in the Faculties of Arts, Law, and Physic, as are granted and conferred in other Colleges and Universities of Great Britain and Ireland. It further ordains that any of the students of the three Queen's Colleges, who shall have obtained such degrees in any of the several Faculties of Arts, Medicine, and Law, as shall be conferred by the Chancellor and Senate of the Queen's University, shall be fully possessed of all such rights, privileges, and immunities, as belong to similar degrees granted by other Universities or Colleges, and shall be entitled to whatever rank and precedence is derived from similar degrees granted by other Universities.

By the charter of the Queen's University, candidates for Degrees in Medicine are required to have attended *at least two courses of Medical Lectures* in some one of the Queen's Colleges. For the remainder of the courses of Medical Lectures, authenticated certificates will be received from the Professors or Lecturers in Universities, Colleges, or Schools, recognised by the Senate of the Queen's University in Ireland.

The Chancellor and Senate also have the power of admitting, by special grace, Graduates of other Universities to similar and equal degrees.

In order to obtain a degree or diploma in the Queen's University it is necessary to enter the College as a Matriculated Student, to pass the entrance or Matriculation Examination, and to pursue a fixed course of study.

The Matriculated Students may be classified as follow:—

I. Those intending to proceed to the Degrees of A.B. and A.M.
II. " " Degree of M.D.
III. " " Diploma of Elementary Law.
IV. " " Degrees of LL.B. and LL.D.
V. " " Diploma of Civil Engineering.
VI. " " Diploma of Surgery.

THE SENATE.

Chancellor.—The Right Honorable George William Frederick, Earl of Clarendon, K.G., G.C.B., &c.
Vice-Chancellor.—The Right Hon. Sir Maziere Brady, Bart., P.C., M.R.I.A., &c.
The Right Hon. David R. Pigot, Lord Chief Baron of the Exchequer, M.R.I.A., &c.
The Rev. P. Shuldham Henry, D.D., President Queen's College, Belfast.
Sir Robert Kane, F.R.S., M.R.I.A., &c., President Queen's College, Cork.
Edward Berwick, B.A., President Queen's College, Galway.
Sir Richard Griffith, Bart., LL.D., M.R.I.A., Commissioner of Public Works.
Sir Dominic J. Corrigan, Bart., M.D., M.R.I.A., Physician in Ordinary to the Queen in Ireland.
Major-General Sir Thomas Askew Larcom, R.E., K.C.B., LL.D., F.R.S., M.R.I.A., &c.
James Gibson, A.M., Q.C., M.R.I.A., Barrister-at-Law.
The Right Hon. James Henry Monahan, Lord Chief Justice of the Common Pleas.
Robert Adams, A.M., M.D., F.R.C.S.
The Right Honorable Sir Robert Peel, Bart., M.P.
The Right Reverend the Lord Bishop of Killaloe, D.D.
His Grace the Archbishop of Dublin.
Thomas A. Shillington, Esq., J.P.
The Right Honorable the Earl of Dunraven and Mount-Earl, K.P.
The Lord Talbot de Malahide, F.R.S., F.R.I.A.
The Lord Clermont, D.L.
Right Honorable William Monsell, M.P.
Right Honorable Thomas O'Hagan, Lord Chancellor of Ireland.
William K. Sullivan, esq., PH.D.
David Ross, M.A., LL.B.
William MacCormac, M.A., M.D.
Thomas William Moffett, LL.D.
Secretary.—G. Johnstone Stoney, M.A.—Office, Dublin Castle.

The Senate holds its sitting in Dublin Castle, where the examinations of the students of the three Colleges, for Graduation and University Exhibitions, are annually conducted by Examiners appointed by the Senate from year to year.

APPENDIX, No. 2.

Return of the Number of Students attending each Class in the Queen's College, Belfast, in each Year.

Class.	Session.								
	1849–50.	'50–51.	'51–52.	'52–53.	'53–54.	'54–55.	'55–56.	'56–57.	'57–58.
Greek—1st year,	71	47	28	16	21	26	29	24	31
„ 2nd „	–	27	18	7	11	12	14	12	13
„ Higher,	–	–	–	–	–	–	–	–	–
Latin—1st year,	63	45	37	19	21	24	27	19	33
„ 2ud „	–	27	17	6	11	11	13	10	11
„ Higher,	–	–	–	–	–	–	–	–	–
The English Language,	52	46	28	20	24	28	31	24	36
History and English Literature, Senior „ „	–	–	25	15	20	16	20	19	20
Modern Languages (French, German, Italian),	62	36	41	27	34	37	29	40	40
Senior „	–	20	28	16	15	15	19	12	16
The Celtic Languages,	*The Lectures in each Session open to the Public.*							–	–
Mathematics—1st year,	86	58	40	25	29	33	30	35	39
„ 2nd „	–	12	11	11	13	11	15	17	16
„ Higher,	–	–	–	–	–	–	–	–	–
Nat. Philosophy—Higher Class,	–	–	–	–	–	6	6	8	7
„ Mathematical Physics, &c.	32	32	46	24	29	23	24	19	26
„ Experimental Physics,	48	59	57	29	40	34	36	37	41
„ Practical Mechanics,	7	3	6	3	4	3	3	2	–
Natural Philosophy applied,	–	–	–	–	–	–	–	–	7
Chemistry,	37	53	63	44	51	60	50	70	60
Practical Chemistry,	6	7	14	10	15	14	12	10	11
Laboratory,	–	6	8	8	9	9	10	15	10
Zoology,	12	34	35	29	31	43	31	43	34
Botany,	12	49	46	35	37	46	36	44	34
Physical Geography,	–	–	29	17	21	19	20	21	28
Logic,	3	–	27	17	21	26	20	27	22
Metaphysics,	–	–	18	15	16	11	17	20	15
Higher Logic and Metaphysics,	–	–	6	7	7	8	6	7	9
Mineralogy and Geology,	*Public.*	6	14	13	15	13	9	20	13
Surveying,	10	9	9	6	6	9	4	–	–
Civil Engineering,	–	4	6	3	4	3	4	17	14
Theory of Agriculture,	11	8	7	2	6	5	5	4	7
Practice of Agriculture,	–	5	3	2	5	5	1	1	3
Diseases of Farm Animals,	–	5	3	2	5	5	1	1	4
Medical Jurisprudence,	2	8	14	10	13	8	10	15	16
Anatomy,	25	36	48	45	44	51	44	39	39
Practical Anatomy,	27	32	35	49	41	46	53	33	41
Practice of Medicine,	9	17	17	12	15	18	33	27	19
Practice of Surgery,	24	15	26	29	28	30	48	32	30
Materia Medica,	11	14	16	17	17	23	25	11	18
Midwifery,	14	10	12	16	17	18	24	13	7
Law of Property, Equity of Bankruptcy, Common and Criminal Law, Evidence and Pleading,	17	16	17	15	11	5	10	14	12
Jurisprudence and Political Economy. Arts,	–	–	12	2	9	6	8	2	18
Civil Law, Constitutional, Colonial, and International Law, Jurisprudence,	11	11	13	8	10	5	9	10	10
Arabic,	–	–	–	–	–	–	–	–	–
Hindustani,	–	–	–	–	–	–	–	–	–
Sanskrit,	–	–	–	–	–	–	–	–	–

Appendix, No. 2—*continued.*

Return of the Number of Students attending each Class in the Queen's College, Belfast, in each Year—*continued.*

Class.	Session.										
	'58-59.	'59-60	'60-61.	'61-62.	'62-63.	'63-64.	'64-65.	'65-66.	'66-67	'67-68.	'68-69.
Greek—1st year,	36	45	69	81	83	66	79	63	49	47	43
,, 2nd ,,	17	23	25	49	63	44	40	49	21	19	24
,, Higher,	5	4	4	7	7	9	12	6	4	5	6
Latin—1st year,	34	46	69	84	83	65	78	64	50	48	43
,, 2nd ,,	16	22	23	49	60	40	33	44	40	34	37
,, Higher,	2	3	2	6	6	8	7	4	6	7	9
The English Language,	41	49	72	85	65	70	80	67	49	46	43
History,	24	24	28	5	8	6	4	4	5	9	6
English Literature,				30	41	52	48	42	52	41	32
Modern Languages (French, German, Italian),	50	76	140	124	110	99	110	115	109	115	96
Senior ,,	13	17	10	54	43	26	36	36	46	33	32
The Celtic Languages,	*The Lectures in each Session open to the Public.*							–	–	–	–
Mathematics—1st year,	45	61	83	93	102	85	92	75	82	58	66
,, 2nd ,,	14	13	13	13	15	20	17	19	12	22	24
,, Higher,	4	8	3	–	5	6	4	4	6	33	7
Nat. Philosophy—Higher Class,	4	9	–	–	–	–	5	4	–	9	5
,, Mathematical Physics, &c.	25	24	64	67	72	69	60	68	56	51	46
,, Experimental Physics,	28	42	87	86	94	95	67	120	104	90	85
Natural Philosophy applied,	3	4	4	–	2	5	6	7	4	6	10
Chemistry,	74	81	64*	89	89	81	93	95	91	84	98
Practical Chemistry,	14	21	21	20	24	28	44	37	44	51	44
Laboratory,	11	10	12	15	15	8	14	16	16	16	17
Zoology,	63	56	37*	57	66	90	82	84	92	83	75
Botany,	62	55	40*	56	62	90	92	27	50	51	60
Physical Geography,	23	28	30	7†	7	–	–	–	–	–	–
Logic,	29	29	35	65	66	57	49	66	52	43	46
Metaphysics,	19	15	24	22	34	40	40	41	39	29	33
Higher Logic,	8	–	–	10	12	25	14	24	33	22	21
Mineralogy and Geology,	11	16	7‡	11	10	12	14	15	5	11	6
Engineering, 1st year,	7	12	9	10	11	15	15	14	12	8	13
Engineering, 2nd year, lectures,	3	4	4	6	11	6	12	10	8	10	4
Engineering, 2nd year, practice,							12	9	8	10	4
Engineering, 3rd year, lectures,	–	–	–	–	3	7	7	7	7	8	9
Engineering, 3rd year, practice,							7	7	5	6	10
Theory of Agriculture,	7	7	6	6	6	–	–	–	–	–	–
Practice of Agriculture,	1	4	3	1	–	–	–	–	–	–	–
Diseases of Farm Animals,	2	3	2	1	–	–	–	–	–	–	–
Medical Jurisprudence,	13	17	14	18	16	25	30	28	35	33	35
Anatomy,	59	60	86	83	63	67	99	109	127	120	130
Practical Anatomy,	44	62	80	85	91	96	126	124	149	159	160
Practice of Medicine,	22	29	25	42	27	36	44	48	87	70	57
Practice of Surgery,	29	39	51	53	53	46	48	55	77	81	75
Materia Medica,	22	27	23	36	37	29	38	47	47	38	48
Midwifery,	17	14	26	36	22	34	19	23	36	37	48
Law of Property,	13	16	16	14	12	12	14	19	13	20	17
Equity and Bankruptcy,											
Common and Criminal Law,											
Evidence and Pleading,											
Political Economy, Arts,	9	7	10	8	16	17	20	15	16	8	10
Civil Law; Constitutional, Colonial, and International Law; Jurisprudence,	11	17	10	12	11	10	11	19	11	16	19
Arabic,	–	1	–	–	–	–	–	–	–	–	–
Hindustani,	–	2	3	2	3	–	–	–	–	–	–
Sanskrit,	–	6	3	4	5	4	4	–	–	–	–
Operative Surgery,	–	–	–	–	11	2	–	16	23	12	10

* No Arts Students this Session, owing to change of Statutes.
† Not now required in third year Arts.
‡ No Engineering Students this Session, owing to change of Statutes.

APPENDIX,

Return of the Amount of Fees received by each

Professor of	1849–50.		1850–51.		1851–52.		1852–53.		1853–54.		1854–55.		1855–56.		1856–57.		1857–58.	
	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.
Greek, . . .	*88	10	83	0	50	0	27	5	38	5	46	5	51	15	44	15	51	0
Latin, . . .	*73	15	79	0	50	10	31	5	38	5	44	5	47	15	39	15	53	0
English History and Literature, . .	50	5	50	5	47	10	31	5	43	5	45	5	59	5	43	15	57	10
Logic & Metaphysics,	6	0	–		† 59	5	34	5	37	15	41	0	41	15	48	5	46	15
Mathematics, . .	116	15	97	10	69	15	43	0	54	10	59	0	60	10	62	15	69	10
Natural Philosophy,	79	5	70	15	99	10	47	0	73	15	76	15	59	10	62	15	72	0
Chemistry, . . Practical Chemistry	85	5	104	0	117	5	91	10	111	10	131	15	105	10	133	0	113	10
Anatomy and Physiology, . Practical Anatomy,	143	0	170	0	195	15	230	10	228	0	250	0	256	0	181	0	208	0
Natural History and Botany, . .	20	10	69	0	70	15	50	15	55	0	76	15	59	10	56	0	52	10
Modern Languages,	97	0	84	0	63	0	50	0	61	0	85	0	74	0	86	0	96	0
Mineralogy and Geology, . .	–		7	10	24	15	17	15	20	15	18	0	12	10	37	0	20	5
Jurisprudence and Political Economy,	20	0	21	0	35	15	18	15	28	0	14	10	29	5	22	10	31	15
English Law, .	32	0	29	0	37	0	23	0	20	0	16	0	21	0	27	0	21	0
Civil Engineering, .	16	0	24	10	22	0	14	0	17	15	21	0	13	10	27	0	22	0
Agriculture and Medical Jurisprudence,	15	10	41	0	49	5	22	0	46	0	32	15	26	0	25	10	40	5
Practice of Medicine,	17	0	31	0	32	0	18	0	30	0	30	0	56	0	43	10	26	0
Surgery, . .	41	0	21	10	36	0	51	0	43	0	43	0	74	0	42	10	34	0
Materia Medica, .	22	0	28	0	26	0	29	0	33	0	43	0	45	0	20	0	34	0
Midwifery, . .	28	0	18	0	22	0	27	0	31	0	33	0	44	0	24	0	12	0
Teacher of Drawing,	–		–		–		–		–		–		–		32	0	25	0

* In the Session of 1849–50, Medical Students were required to attend the Greek and Latin Classes, but have since been exempt from attending either class.

† Professor M'Cosh was appointed in Session 1851–52, and taught and received fees from Students properly belonging to the previous Session.

Queen's College, Belfast, May, 1869.

Appendix, No. 4.

APPENDIX,

Expenditure of One Year's Additional Grant.

Account of the Expenditure of One Year's Additional Grant

1. Library of Ancient and Modern Literature and Philology:

	£	s.	d.
Ancient Classical Languages and Philology, ...	28	3	8
English History and Literature, ...	19	15	4
Foreign Modern Languages, ...	13	12	6
Works of General Interest, &c., ...	77	17	6
	139	9	0

2. Libraries, Museum, &c., Mathematical, Physical, and Chemical Sciences:

	£	s.	d.
Mathematical and Physical Libraries, ...	24	12	2
Chemical Library, ...	8	0	4
Museum and Cabinet of Physical Science, . . .	56	18	5
,, Laboratory, Chemical Science, . . .	51	6	6
	140	17	5

No. 3.

Professor in the Queen's College, Belfast, in each Year.

1858-59.		1859-60.		1860-51.		1861-62.		1852-63.		1863-64.		1864-65.		1865-66.		1866-67.		1867-68.		1868-9.	
£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.	£	s.
78	0	*93	5	*131	15	*186	0	*187	15	*221	0	233	10	212	0	131	0	121	0	127	0
67	0	†90	0	127	15	185	0	185	15	211	0	220	10	202	0	167	0	152	0	155	0
69	0	94	15	117	5	155	10	164	5	153	10	162	10	131	10	143	10	130	10	107	10
68	10	39	0	58	10	105	5	134	10	173	10	143	0	183	10	184	10	140	10	139	10
97	10	139	10	156	0	183	5	211	5	201	0	208	0	173	0	143	0	135	0	132	0
66	10	61	5	180	10	178	15	194	10	183	0	186	0	208	0	198	0	192	0	183	0
147	5	184	0	167	0	195	15	210	5	213	10	294	10	252	0	277	10	299	0	284	10
262	10	307	0	427	10	‡432	10	‡425	10	‡453	10	587	10	544	0	643	14	652	8	781	18
105	5	94	10	70	0	96	10	120	5	157	0	170	0	144	0	154	0	165	0	133	0
120	0	159	10	277	0	319	5	270	15	231	0	278	0	247	0	268	0	280	0	245	0
21	15	24	15	11	10	15	5	20	10	22	0	25	0	24	0	9	0	20	0	7	0
20	10	36	10	28	10	25	15	37	10	38	0	51	0	51	0	46	0	37	0	40	0
25	0	28	0	28	0	25	0	21	0	18	0	20	0	25	0	23	0	35	0	31	0
22	15	24	15	32	0	40	15	70	0	82	0	97	0	79	0	68	0	70	0	70	0
31	5	47	0	43	0	§44	0	§38	15	48	0	55	0	48	0	67	0	63	0	50	0
37	0	44	0	37	0	64	10	46	0	59	0	74	0	77	0	103	0	103	0	92	0
46	0	65	10	79	13	84	12	96	11	73	0	82	0	94	0	137	0	144	0	131	0
39	0	50	0	50	0	69	0	70	0	59	0	73	0	88	0	86	0	71	0	89	0
28	0	25	0	48	0	63	0	36	0	66	0	36	0	42	0	64	0	72	0	93	0
26	0	22	0	-		-		-		-		-		-		-		-		-	

[*] Besides for Sanskrit and Hindustani, 1859-60, £35; 1860-61, £22 10*s.*; 1861-52, £25; 1682-53, £32 10*s.*; 1853-64, £20; 1864-5, £20.

[†] Besides for Arabic in 1859-50, £5.

[‡] The Professor of Anatomy pays to his Demonstrator a portion of the fees for Practical Anatomy.

[§] No endowment for Medical Jurisprudence. Professor Hodges delivers the lectures, receiving only class fees.

ALEXANDER DICKEY, *Bursar.*

No. 4.

Appendix, No. 4.

Expenditure of One Year's Additional Grant.

to the Queen's College, Belfast, ending 31st March, 1868.

3. Libraries, Museum, and Collection of Objects of the Department of the Natural Sciences:

	£ s. d.
Library of Natural History,	17 1 6
,, Geology and Mineralogy,	11 11 6
Museum of Natural History,	89 6 8
,, Geology and Mineralogy,	40 13 3
	158 12 11

4. Libraries, Museums, and Collections of Objects of the Department of Engineering:

Library of Engineering,	5 18 9
Instruments and Collections of Engineering,	6 16 0
	12 14 9

Appendix, No. 4.

Expenditure of One Year's Additional Grant.

APPENDIX, No. 4—*continued.*

ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT to the Queen's College, Belfast, ending 31st March, 1868—*continued.*

	£	s.	d.
5. Museum and Library of Medical Science:			
Library of Medical Works,	28	2	6
Anatomical and Pathological Museums, &c.,	73	9	9
Surgical Museum,	8	5	0
Medical Jurisprudence,	8	8	2
Practical Medicine,	10	0	0
	128	5	5
6. Library of Metaphysical, Legal, and Economical Science:			
Law, Jurisprudence, and Political Economy,	11	3	11
Metaphysics,	17	8	10
	28	12	9
7. Printing, Stationery, Advertising, Postages, Office Expenses, &c.,	319	1	0
8. Heating and Lighting,	109	14	3
9. Grounds,	81	11	11
Balance in Bank of Ireland Office, 31st March, 1868,	367	2	2
Total,	1,486	1	7
Amount of One Year's additional Grant,	1,000	0	0
College and Matriculation Fees,	117	0	0
Received for Calendars and Fines,	8	17	0
Balance in Bank, 31st March, 1867,	360	4	7
Total,	1,486	1	7

The Accounts of the College up to 31st March, 1868, have been examined and found correct by the Commissioners for Auditing the Public Accounts.

May, 1869.

ALEXANDER DICKEY, *Bursar.*

APPENDIX, No. 5.

General Class Examinations, Queen's College, Belfast.

—	Session 1867-68.			A.M.	P.M.	Session 1868-69.			A.M.	P.M.
The English Language,	Saturday,	January	11	—	12—4	Saturday,	January	9	—	12—4
Logic,	Saturday,	February	8	9—12	—	Saturday,	February	6	9—12	—
Mineralogy and Geology, and Physical Geography,	Thursday,	February	27	10—1	—	Thursday,	February	25	10—1	—
Zoology,	Saturday,	February	29	10—1	—	Saturday,	February	27	9—12	—
Metaphysics,	Tuesday,	April	7	9—12	and 2—5	Tuesday,	March	23	9—12	and 2—5
English Literature,	Wednesday,	April	8	9—12	and 2—5	Wednesday,	March	24	9—12	and 2—5
History,	Thursday,	April	9	—	2—5	Thursday,	March	25	9—12	—
Practical Anatomy,	Saturday,	April	18	9—12	—	Saturday,	April	17	9—12	—
Practice of Medicine,	Monday,	April	27	9—12	—	Tuesday,	April	27	9—12	—
Midwifery,	Monday,	April	27	—	2—5	Tuesday,	April	27	—	2—5
Anatomy and Physiology,	Tuesday,	April	28	9—12	and 2—5	Wednesday,	April	28	9—12	and 2—5
Materia Medica,	Wednesday,	April	29	9—12	—	Thursday,	April	29	9—12	—
Practice of Surgery,	Wednesday,	April	29	—	2—5	Thursday,	April	29	—	2—5
Medical Jurisprudence,	Thursday,	April	30	9—12	—	Friday,	April	30	—	2—5
Modern Languages,	Tuesday,	June	2	9—12	and 2—5	Tuesday,	June	1	9—12	and 2—5
Greek (First Year),	Wednesday,	June	3	9—12	,, 2—5	Wednesday,	June	2	9—12	,, 2—5
,, (Second Year),	Thursday,	June	4	9—12	,, 2—5	Thursday,	June	3	9—12	,, 2—5
Latin (First Year),	Thursday,	June	4	9—12	,, 2—5	Thursday,	June	3	9—12	,, 2—5
,, (Second Year),	Wednesday,	June	3	9—12	,, 2—5	Wednesday,	June	2	9—12	,, 2—5
Engineering, 1st, 2nd, and 3rd years,	Thursday,	June	4	9—12	,, 2—5	Thursday,	June	3	9—12	,, 2—5
Office and Fieldwork,	Wednesday,	June	3	—	2—5	Wednesday,	June	2	—	2—5
Mathematics,	Friday,	June	5	9—12	and 2—5	Friday,	June	4	9—12	,, 2—5
Natural Philosophy,	Saturday,	June	6	9—12	,, 2—5	Saturday,	June	5	9—12	,, 2—5
Chemistry,	Monday,	June	8	9—12	,, 2—6	Monday,	June	7	9—12	,, 2—5

General Examination of Students in Law, and also of other Students in Political Economy, Botany, and Practical Chemistry at the close of the Lectures on these subjects.

APPENDIX, No. 6.

Return of the Number of Lectures delivered by each Professor in the Queen's College, Belfast, in each Year.

—	1849, 1850	1850, 1851	1851, 1852.	1852, 1853.	1853, 1854.	1854, 1855	1855 1856.	1856, 1857	1857, 1858.	1858, 1859.	1859, 1860	1860, 1861	1861, 1862.	1862, 1863.	1863, 1864	1864, 1865.	1865, 1866.	1866, 1867	1867 1868.	Remarks.
Professor of— Greek, . . .	135	232	244	246	236	240	224	235	636	350	300*	460*	440*	360*	350	350	350	360	340	In addition, examining numerous exercises.
Latin, . . .	162	297	615	221	186	196	232	230	230	275	398	234	234	364	220	324	324	324	319	Do. do.
History and English Literature, . .	35	55	98	61	104	100	105	105	99	110	123	92	154	146	140	167	167	167	148	Besides correcting about 650 exercises.
Modern Languages,	208	330	324	307	306	305	316	340	369	307	340	372	372	360	356	356	356	406	406	
Celtic, . . .	6	6	6	6	6	6	6	6	6	6	6	6	–	–	–	–	–	–	–	Open to the Public without charge.
Mathematics, . .	130	256	333	248	246	330	346	322	330	400	400	370	370	316	325	330	317	317	296	Besides three hours each week on which the Senior Scholar meets the Junior Division.
Natural Philosophy	122	257	233	206	256	280	255	307	300	300	242	242	213	182	180	180	180	160	288	In addition, arranging apparatus, which occupies as much time as the lectures.
Chemistry, . .	134	136	137	129	132	130	136	142	142	140	132	132	132	132	130	130	130	130	130	In addition, superintending the working pupils, of whom from eight to twelve are admitted each year by examination to the laboratory without charge.
Practical Chemistry	66	36	36	36	36	36	36	66	34	36	36	36	36	36	36	36	55	55	56	
Natural History, .	120	120	133	137	136	135	142	140	143	140	140	140	140	140	140	140	140	140	140	Including lectures in Physical Geography, delivered free to all students.

Mineralogy and Geology, . .	Public.	86	54	59	54	55	49	59	52	52	52	52	52	52	52	52	52	52	52	In addition, daily attendance as Curator in the Museum.
Logic & Metaphysics	–	–	78	142	176	175	164	177	179	167	140	159	194	208	195	195	195	195	135	In addition, criticising above 600 essays in each session.
Civil Engineering, .	184	138	140	136	140	136	147	119	100	194	195	220	196	328	319	236	247	247	247	Including practical work under the direction of the Professor.
Agriculture, . .	172	206	205	212	209	213	218	186	190	166	150	156	156	50	50	50	41	41	35	Including lectures on Medical Jurisprudence, for which there is no salary.
Anatomy and Physiology, . .	115	116	115	115	114	115	117	113	115	115	115	112	108	108	224	261	260	260	260	In addition, daily practical teaching in the dissecting-room for three hours by the Professor, and four hours by his assistant.
Practice of Medicine,	93	96	92	92	94	94	84	85	75	95	95	95	95	95	95	95	95	95	95	
Practice of Surgery,	93	94	93	91	91	92	94	84	94	94	94	94	94	93	93	93	93	93	93	Besides about twenty-five lectures each session on Operative Surgery.
Materia Medica, .	92	91	91	93	90	90	92	80	84	84	84	84	84	84	84	84	84	84	80	
Midwifery, . .	92	92	92	91	90	93	93	93	93	95	90	80	80	79	76	76	79	76	76	Besides practical instruction to students which may be required at any hour throughout the year
English Law, .	24	48	72	96	96	96	96	96	96	96	72	72	96	99	96	96	99	96	96	No third year Class in 1859-60, or fourth year Class in 1860–61.
Jurisprudence & Political Economy, .	24	48	96	120	120	120	120	120	120	96	120	120	120	120	120	120	120	120	120	

The above Return gives the number of Meetings of one hour each, in each Class. The system of instruction includes, not merely formal Lectures, but also examination in the business of the course, in some classes these examinations are held daily, in others on fixed days of the week, according to the nature of the subject.
The Professors also conduct the General Scholarship Examinations, and some of them, in addition, the Matriculation and Supplemental Examinations

* Including about 110 on Sanskrit and Hindustani.

OCTOBER EXAMINATIONS of Queen's College, Belfast, 1869.

Days.	Hours.	First Year Students.	Second Year Students.	Third Year Students.	Fourth Year Students.
Tuesday, Oct. 19.	9—12		Suppl. Ex. { English Mod. Lang Math.	Suppl. Ex.—Mod. Lang., Math., Nat. Phil., Chem.	Senior Schol.—Latin.
	2—5		Suppl. Ex.—Greek, Latin.	Suppl. Ex.—Greek, Latin, Logic.	Senior Schol.—Latin.
Wednesday, Oct. 20.	9—12		Liter. Schol.—Greek.		Senior Schol.—Greek.
	2—5		Liter. Schol.—Greek.		Senior Schol.—Greek.
Thursday, Oct. 21.	9—12		Med. Engin. } Schol.—Chem.	Previous Examination, in Arts and Engineering, of Queen's University.	Senior Schol.—Chem.
	2—5	Matric.—Math.	Med. Engin. } Schol.—Chem.		Senior Schol.—Chem.
Friday, Oct. 22.	9—12	Matric.—Greek, Latin			
	2—5				
Saturday, Oct. 23.	9—12	Matric.—English, *in Arts only.*			Senior Schol.—Mod. Hist.
	2—5	Matric.—English, *in Medicine, &c.*			Senior Schol.—Mod. Hist.

Monday, Oct. 25.	9—12		Med. Schol.—Botany	Engin. Schol. { Geol and Phys. Geog.	Senior Schol.—Nat. Hist.
	2—5	Lists of Matriculated Students to be made out.	Med. Schol.—Zoology Liter. Schol.—English.		Senior Schol.—Nat. Hist.
Tuesday, Oct. 26.	9—12	Science Med Engin } Schol.—Math.	Science Engin } Schol.—Math.	Engin. Schol.—Math.	Senior Schol.—Math.
	2—5	Science Med Engin. } Schol.—Math.	Science Engin. } Schol.—Math. Med. Schol.—Anat. and Phys.	Engin. Schol.—Math. Med. Schol.—Anat. and Phys.	Senior Schol.—Math. Med. Schol.—Prac. of Midw
Wednesday, Oct. 27.	9—12			Med. Schol.—Prac. Chem.	Senior Schol.—Nat. Phil. Med. Schol.—Prac. of Med.
	2—5	Liter. Med. } Schol.—English.	Engin Schol.—Exp. Phys.	Engin. Schol.—Nat. Phil.	Senior Schol.—Nat. Phil.
Thursday, Oct. 28.	9—12	Liter Med. } Schol.—Latin.	Liter Schol.—Latin. Engin. Schol.—Geo. Draw.	Engin. Schol.—C. Engin. Med. Schol.—Mat. Med.	Med. Schol.—Med. Jur. Senior Schol.—Pol. Econ.
	2—5	Liter. Med. } Schol.—Latin.	Liter. Schol.—Latin. Engin. Schol.—Geo. Draw.	Engin Schol.—C. Engin.	Senior Schol.—Pol. Econ. Med. Schol.—Surg. Anat.
Friday, Oct. 29.	9—12	Liter. Med. } Schol.—Greek.	Liter. Schol.—Mod. Lang.		Senior Schol.—Mod. Lang. Senior Schol.—Metaph. Med. Schol.—Anatomy.
	2—5	Liter. Med. } Schol.—Greek.	Liter Schol.—Mod Lang.		Senior Schol.—Mod. Lang. Senior Schol.—Metaph. Med. Schol.—Physiology.

Students passing the Supplementary Examinations complete the previous year, and take rank accordingly.

Hours of Lectures,—Session 1868–69.

Hours.	Arts.			Civil Engineering.			Medicine.
	1st Year.	2nd Year.	3rd Year	1st Year.	2nd Year.	3rd Year.	
9 till 10	*French.* Monday Wednesday Thursday *German.* Tuesday Friday	*Mathematics.* Monday Tuesday Wednesday Thursday Friday		*French.* Monday Wednesday Thursday *German.* Tuesday Friday	*Mathematics.* Monday Tuesday Wednesday Thursday Friday		
10 till 11	*Mathematics.* Monday Tuesday Wednesday Thursday Friday	*French.* Monday Wednesday Thursday *German.* Tuesday Friday	*Honor Classes*	*Mathematics* Monday Tuesday Wednesday Thursday Friday			
11 till 12	*Latin.* Monday Wednesday Friday	*Nat Philos. Exp Phys.* Monday Wednesday Friday *Mat Phys.* Tuesday Thursday	*Eng Lit.* Monday Wednesday Friday *History.* Tuesday Thursday	*Exp. Phys.* Monday Wednesday Friday *Geom. Drawing.* Tuesday Thursday	*Mineralogy and Geology* Monday Wednesday Friday *Mat. Phys.* Tuesday Thursday	*Office and Field Work.* Tuesday Thursday	*Exp. Phys.* 3 months Monday Wednesday Friday *Prac. Chem.* *[see below Summer Medical Classes.]*
12 till 1	*Greek.* Monday Thursday Friday	*Latin.* Monday Wednesday Friday	*Metaphysics.* Tuesday Wednesday Thursday Friday *History.* Monday	*Geom. Drawing, and Office Work.* Tuesday Thursday	*Office and Field Work.* Tuesday Thursday	*Office and Field Work.* Tuesday Thursday	*Anatomical Demonstrations.* Monday Tuesday Wednesday Thursday Friday

1 till 2		*Greek.* Monday Thursday Friday	*Zool. to Mar 1.* Monday Tuesday Wednesday Friday *Bot. from May 1* Monday Tuesday Wednesday Thursday Friday		*Civil Eng* Monday Wednesday	*Nat. Philos. applied.* Tuesday Thursday	*Zool. to Marc 1.* Monday Tuesday Wednesday Friday	*Bot. from May 1* Monday Tuesday Wednesday Thursday Friday	*Surgery.* Monday Tuesday Wednesday Thursday	*Med. Juris.* Friday
2 till 3	*English.* Monday Tuesday Wednesday Friday	*Logic.* Tuesday Wednesday Thursday Friday	*Pol. Economy.* Tuesday Thursday Friday			*Civil and Mech Eng* Monday Wednesday			*Anatomy.* Monday Tuesday Wednesday Thursday Friday	Examination on Fridays at 4 o'clock.
3 till 4			*Chemistry* Monday Tuesday Wednesday Thursday Friday	*Chemistry* Monday Tuesday Wednesday Thursday Friday	Field Work and Engineering Excursions and additional Lectures for 2nd and 3rd Year Students occasionally on Fridays and Saturdays for some hours			*Chemistry.* Mon. Tues. Wed Thur. Fri. *after May 1 from 11 till 4*	*Midwifery.* Monday Tuesday Thursday	*Medical Jurisprud.* Wednesday
4 till 5			Chemical Laboratory open from 9, A.M., till 3, P.M.					*French.* Monday Thursday or from 9 10, A M	*Materia Med.* Monday Tuesday Wednesday Thursday	*Prac Med.* Monday Tuesday Wednesday Thursday

SUMMER MEDICAL CLASSES, COMMENCING MAY 1, 1869.

Practical Chemistry, ...	Monday, Tuesday, Wednesday, Thursday, Friday, from 11 A.M.
Botany, ...	Monday, Tuesday, Wednesday, Thursday, Friday, 1 P.M.
Experimental Physics, ...	Monday, Wednesday, Friday, 2 o'clock; Tuesday, Thursday, 11 A.M.

FACULTY OF LAW.—HOURS OF LECTURES.

1st Year.				2nd Year.				3rd Year.		4th Year.					
[illegible] o'clock, P.M.	*Law of Property.* Monday Wednesday Friday	7 o'clock, P.M.	*Jurisprudence.* Monday Wednesday Friday	7 o'clock, P.M.	*Equity and Bankruptcy* Monday Wednesday Friday	8 o'clock, P.M.	*Civil Law.* Monday Wednesday Friday	11 o'clock, A.M.	*Common and Criminal Law.* Tuesday Thursday Saturday	10 o'clock, A.M.	*Evidence and Pleading.* Tuesday Thursday Saturday	6 o'clock, P.M.	*Constitutional & Colonial Law.* Monday Wednesday Friday	1&6 o'clock, P.M.	*Medical Jurisprudence,* Wednesday, 6 o'clock Friday, 1 o'clock

APPENDIX, No. 7.

Appendix, No. 7.

Digest of Subjects and Courses.

An Enlarged Digest of Subjects and Courses pursued in Queen's College, Belfast.

Greek—*Professor, Charles MacDouall,* ll.d., m.r.a.s.

In the Greek Class, as in all those which are attended during more than one session, the business, as well as the hours assigned to the Students of the different years, is necessarily different; but it is always distributed into three simultaneous processes, viz., public examinations, lectures more or less formal, and exercises written at home and commented on in the class.

In the first session, the complex and self-contained structure of the Greek language is subjected to a close analysis; carried out, on the one hand, by tracing words to their crude forms, by classifying terminations, both the primary and the flexional, and by discriminating among analogically correct forms those actually used in different ages and dialects; on the other hand, by exhibiting the methods by which words are combined in simple clauses, clauses are knit into sentences, and sentences compose periods less or more complicated. Some prose-work furnishes the materials for this analysis; while the Students read and translate it, or else re-translate off-hand passages read out in English before them by the Professor. Besides syntactical phænomena, the laws and characteristics of both epic and dramatic versification are expounded and exemplified, while a portion of the *Ilias* and some tragedy are used as text-books.

In the second session, while consecutive passages of Herodotus along with some Attic oration or philosophical treatise, and a portion of the *Odysseia* along with some Attic tragedy or comedy, form the basis of prelections, the previous discipline is continued and extended; the distinctions of dialect and style are more fully elucidated; the origin, growth, and fortunes of the epos, the drama, history, and other departments of literature, are more distinctly unfolded; discussions on points of mythology, geography, chronology, archæology, æsthetics, &c., are more freely introduced and more amply treated. The Students are required to turn Herodotean Greek, at sight, into Attic, altering both the forms of words and the structure of sentences; to re-translate passages into Greek prose and verse; and also to give in original essays in both forms of composition.

In a distinct or higher class, advanced Students, generally in the third or fourth year of their Course, are exercised in the study of more difficult works than those previously read, in the higher problems of criticism and philology, and especially in composing both prose and verse.

The following Text-books have been used in the successive Sessions of College from 1849–50 to 1865–66:—*The Ilias*—all the Books except I., II., IV., V., VII.; *the Odysseia*, Books I. to XVI. (inclusive); Hesiodus, *Theogonia;* Pindarus, *Olympia*, *Pythia*, *Nemea;* Aeschylus, all the Tragedies except the *Supplices;* Sophocles, the seven Tragedies; Euripides, *Alcestis*, *Hippolytus*, *Hecabe*, *Phoenissae*, *Orestes*, *Helene*, *Hercules Furens*, *Bacchae*, *Ion*, *Rhesus*, *Troades*, *Andromache*, *Iphigeneia in Aulide*, *Iphigeneia in Tauris;* Aristophanes, *Nubes*, *Aves*, *Ranae;* Herodotus, Books I., II., III., IV., VII., IX.; Thucydides, Books I., II.; Xenophon, Portions of *Anabasis* and *Cyropaedeia;* Platon, *Apologia Socratis*, *Gorgias*, *Phaedon*, *Phaedrus*, *Philebus*, *Protagoras*, *Theaetetus*, *Timaeus*, and Books I., VII., and X. of *Respublica;* Aristoteles, *Poetica* and portions of *Rhetorica;* Demosthenes, *c. Meidiam* and *de Corona;* Aeschines, *in Ctesiphontem.*

The Sanskrit and Hindustani Classes, conducted during six Sessions by the Professor of Greek, have been discontinued.

Appendix, No. 7.

Digest of Subjects and Courses.

LATIN—*Professor, William Nesbitt*, M.A.

The Professor of Latin gives three lectures weekly to Students of the First, and the same number to Students of the Second Year, attendance upon which is compulsory for those who take the Latin Classes. Besides these compulsory lectures, he gives two lectures additional to Students of each of these years, attendance on which is voluntary, in which more difficult authors are read, and special attention is paid to composition. The attendance on these lectures is very good.

An honor Class has been formed of Students of the Third and Fourth Years, chiefly attended by those who are anxious to distinguish themselves in Ancient Classics at the Degree Examination.

The number of hours during which the Professor lectures each week is thirteen.

HISTORY AND ENGLISH LITERATURE—*Professor, Charles Duke Yonge*, A.B. OXON.

Class of the English Language.

The business of this Class is conducted by—

A Course of Lectures on the Origin, Formation, Inflections, and Grammar of the English Language, for which Dr. Latham's "English Language" forms in some degree the text-book;

With occasional Lectures on the rules and principles of Prose Composition, and Weekly Essays.

Class of English Literature.

The business of this Class is conducted by—

A Course of Lectures on English Literature in general, and particularly on the lives, works, and styles of the best authors in each department;

With Special Lectures also on the works appointed as the subjects for the Dublin Autumnal Examination of the ensuing year, with and without Honors;

And Fortnightly Essays.

Class of History.

The business of this class is conducted by—

Lectures on History in general;

Lectures on English History, embracing rather the larger half of the entire course;

A subsequent course on the History or that portion of the History of any other country which is selected as a subject for the Dublin Autumnal Examination of the ensuing year.

MODERN LANGUAGES—*Professor, Albert Ludwig Meissner*, PH.D.

The instruction in Modern Continental Languages embraces three courses each for French and German, extending over three terms, and a course of Italian during the first two terms, attendance on which is voluntary.

No entrance examination is as yet held in Modern Languages, in consequence of which the insufficiency of intermediate teaching is more apparent in this department than perhaps in any other. The consequence of this is, that the Professor is over-burdened with a great amount of elementary teaching, without which his classes cannot be kept in good working order. The number of lectures delivered during the past session was no less than 406. Something, it is hoped, may be done to relieve the Professor of some part of the elementary teaching, so as to increase his usefulness in the more advanced classes.

Students in Arts and Medicine, and in the department of Engineering, are required to attend lectures on one Modern Language for one session. The majority select for this purpose the French language; several, however, attend both French and German. For Students in Arts of the second and higher years, Modern Languages form one in a group of four subjects, out of which they select two.

C

Appendix, No. 7.

Digest of Subjects and Courses.

The work of the classes, especially during the first two terms, is carried on to a great extent by means of *vivâ voce* questions and answers. Frequent oral examinations are held, and at each meeting of the classes a passage is translated from English into French or German.

In the First Session the Grammar and the principles of composition are explained, and select passages are translated from French and German Classics.

In the Second Session a systematic course of composition is gone through, and the Students are made acquainted with the principal authors of French and German Literature.

In the Third Session a course on the elements of Comparative Grammar is delivered, which is followed by a course on some period of Continental Literary History. The students write essays in Modern Languages, which are read and discussed in the class.

Medical Students unable to attend the classes in Arts, are instructed in a separate class.

About six per cent. of the Students attending Lectures on Modern Languages are Non-Matriculated.

MATHEMATICS—*Professor, John Purser,* M.A.

Attendance on this Class is prescribed to all Students in the Faculty of Arts during the first year of their Course; during the second year Mathematics forms one of four Courses, out of which the Students select two.

All Students in the Department of Engineering are required to attend the Mathematical Classes during two years.

Before entering, Students are required to pass an examination in the First and Second Books of Euclid, and in a small portion of Algebra. Practically they come fairly prepared in the prescribed portions of Euclid, but a large proportion can hardly be said to possess even an elementary knowledge of Algebra. A considerable number of the Students are Candidates for Mathematical Scholarships at entrance, and these are generally well prepared in the first six Books of Euclid, and a considerable portion of Algebra and Plane Trigonometry.

On this account the instruction of the First Year in Mathematics has been given in two Divisions. The Lower Division is carefully taken through such portions of Euclid I., II., III., IV., VI., as they have not previously prepared, and is instructed in Algebra as far as the progressions, and in Plane Trigonometry as far as the solution of triangles, with the use of logarithms and trigonometrical tables. In the Upper Division a more advanced course of lectures is given in Geometry, Plane Trigonometry, and Algebra, to which is added either the Conic Sections, treated geometrically, or Spherical Trigonometry.

The Council has sanctioned the employment of the Senior Mathematical Scholar in giving a portion of the instruction of the Lower Division. This arrangement, while it affords a greater number of hours to the Lower Division, enables the Professor of Mathematics to give more attention to the Upper Division, and has been found to work very satisfactorily.

In the Second Year the subjects of Lecture are Analytical Geometry, the Differential and Integral Calculus, and the first three sections of the Principia of Newton.

In the Third Year an Honor Course is given, in which are taught the higher branches of the Calculus, Geometry of Three Dimensions, and Differential Equations.

NATURAL PHILOSOPHY.—*Professor, Joseph David Everett,* M.A., D.C.L.

The Classes in this Department are arranged under the three heads of Experimental Physics, Mathematical Physics, and Natural Philosophy Applied.

All Students in the Faculty of Arts in their Second Year attend the Classes of Experimental and Mathematical Physics. Engineering Students attend the Class of Experimental Physics in their First Year, the Class of Mathematical Physics in their Second Year, and the Class of Natural Philosophy Applied in their Third year. Medical Students attend the Class of Experimental Physics only.

In all these Classes the teaching is by prelection interspersed with oral examination.

Appendix, No. 7.

Digest of Subjects and Courses.

The subjects treated under the head of Experimental Physics include—Properties of Matter, Mechanical Powers, the Elements of Hydrostatics and Hydraulics, Heat, Light, Sound, Electricity, and Magnetism; the leading principles in these several departments being broadly laid down and copiously illustrated by experiments.

The Course of Mathematical Physics includes a rigorous demonstration of the principal theorems in Statics and Kinetics, an explanation of the leading principles of Astronomy, Geometrical Optics, and the Mathematical treatment of numerous questions connected with the subjects of the Experimental course.

In the Class of Natural Philosophy Applied, the subjects include a more advanced course of Statics, Kinetics, and Hydrostatics, involving application of the Differential and Integral Calculus, and illustrated by practical examples, Kinematics, including the principles of Mechanism, the relations of Stresses and Strains, Moduli of Elasticity and Rigidity, Work Done, Kinetic and Potential Energy, Elements of Thermodynamics.

In addition to the above-named Classes, there is an Honor Class, attended by Senior Students, in which the subjects prescribed for University Honors are studied.

CHEMISTRY—*Professor, Thomas Andrews,* M.D., F.R.S., M.R.I.A.

In the Class of Chemistry the greater part of the Course is devoted to pure Chemistry; but the Elements of the Sciences of Heat and Electricity, particularly in their relations with Chemistry Proper, are also taught. The application of these sciences to the arts are particularly referred to; and it has been the constant endeavour of the Professor to communicate to the Students as precise and accurate information as possible on the subjects treated in his Lectures, and to train them to habits of careful observation and accurate thinking. With this view a weekly examination of the whole Class is held, at which the Students are subjected to a searching examination on the business of the preceding week; and further to encourage a taste for scientific inquiry, and also to train a certain number of practical chemists, a limited number of the Students are admitted, by examination, as working pupils into the chemical laboratory, where they have an opportunity of acquiring a knowledge of chemical analysis. This latter arrangement has now been in practice for several years, and has been attended with the best results.

NATURAL HISTORY—*Professor, Wyville Thomson,* LL.D., F.R.S.

The Zoological Department of the Course occupies the First Term and greater part of the Second, and comprehends the Outlines of Anatomy and Physiology of animals, followed by Systematic Zoology, and remarks on the distribution of animals.

The Botanical part comprehends Vegetable Anatomy and Physiology, Systematic Botany, and distribution of vegetable forms. In addition to the Class Lectures, meetings are held in the Botanic Garden, and practical excursions made into the neighbouring country.

This Course comprehends chiefly Lectures on the structure and form of continents and islands; the distribution of mountain systems, rivers, and lakes; the ocean, its currents, temperature, &c.; the atmosphere, its currents, &c.; rain, snow, &c. The preceding subjects are considered in relation to the geographical distribution of animals and plants.

These different branches are illustrated by specimens, or drawings, or both, as the case may be.

GEOLOGY AND MINERALOGY—*Professor, Wyville Thomson,* LL.D., F.R.S.

The Courses consist of lectures, demonstrations, and examinations. The Geological Course embraces the general principles of the science, and a detailed investigation of the palæontological, lithological, and economic characters of all the formations. The Students are exercised in the practical use of the necessary instruments, and in the construction of Geological maps and working sections.

C 2

Appendix, No. 7.

Digest of Subjects and Courses.

The characteristic fossils of the different formations are rendered familiar by the exhibition of specimens and models, and an excellent series of drawings. Drawings are also used for the illustration of the underground workings of mines of copper, coal, &c.

In the Mineralogical Course the Students are instructed in the most modern crystallography by models, and exercised with the reflecting goniometer. The electro-chemical classification of minerals is then explained, and an extensive suite of minerals in the Museum is arranged on that system, for the instruction of the Students.

Once a week examinations are held, and additional explanations given of the subjects of the preceding lectures.

Logic and Metaphysics—*Professor, John Park,* m.a.

Logic.

This class meets at 2 p.m., on Tuesdays, Wednesdays, Thursdays, and Fridays, during the First, and part of the Second Term of the Session.

The business of the class is conducted by lectures on—1st. The laws of Pure or Formal Thought. 2nd. The laws of Thought as directed to particular classes of objects, and as dependent to some extent on the special natures of these objects; by examinations on the lectures and on Whately's "Logic," and by the criticism of Essays on Logical subjects.

Students are recommended to read Morell's "Handbook of Logic," and Bacon's "Novum Organum," Book I., before entering the class.

Metaphysics.

This class meets at noon, on Tuesdays, Wednesdays, Thursdays, and Fridays, during the First and Second Terms of the Session.

The business of this class is conducted by lectures on—1st. Psychology, or the science which examines the facts and the conditions of the phenomena of the human mind; and, 2nd, Metaphysics Proper, or the science which investigates the Nature of Truth and of Existence; by examinations on the lectures, on Mansel's "Metaphysics," and on Henry's translation of "An Epitome of the History of Philosophy; and by the criticism of Essays on Metaphysical subjects.

Higher Logic.

This class meets three times a week, and is conducted by lectures, and a course of reading and examinations.

Civil Engineering—*Professor, James Thomson,* m.a., c.e.

The Courses of lectures and practical instruction given by the Professor of Civil Engineering are arranged to accord with the Ordinances of the Queen's University, which prescribe to candidates for the Diploma in Civil Engineering a Curriculum extending over three Sessions usually, but admitting of abbreviation to two Sessions in the case of students whose previous acquaintance with a sufficient group of the subjects prescribed for study in the first and second Sessions of the ordinary Course shall be deemed by the College Council satisfactory.

For the First Year Students the Professor gives a course of instruction, comprising lectures and oral examinations on the Principles of Geometrical Drawing, and the performance by the students of practical work under his direction. The lectures include the principles of descriptive geometry, orthographic and isometric projection, and linear perspective; and the practical work comprises the performance of examples in these subjects, and the execution of drawings in Mechanical Engineering, and occasionally also in Architecture and Civil Engineering. The Class meets for two hours at a time on two days per week during the three Terms of the College Session.

For the Second Year Students two courses are conducted by the Professor of Engineering, of which one is a Lecture Course and the other a Practice Course. The Lecture Course comprises surveying, levelling, and plotting, with the theory

Appendix, No. 7.

Digest of Subjects and Courses.

and use of the instruments required in surveying and levelling operations; mensuration of earthworks for railways; setting out works on the ground, including ranging of railway curves, and setting out breadths of cuttings and embankments, and ranging tunnels, &c. The Course also comprises usually some of the following subjects:—revision and farther prosecution of descriptive geometry, and perspective, and other subjects of geometrical drawing; designing and drawing of oblique bridges; properties and qualities of materials used in construction, and modes of procuring them; and an introduction to architecture as a fine art.

In the Practice Course of the Second Year the Students are engaged in the performance of office and field work, under the instruction and direction of the Professor; and the business includes surveying, levelling, drawing, mapping, and the computation of areas of lands, and other engineering calculations. Excursions are also made occasionally during the Session to visit Engineering works.

For the Third Year Students there are (as for those of the Second Year), two Courses conducted by the Professor, one a Lecture Course, and the other a Practice Course. The Lecture Course comprises the farther treatment of some of the subjects proposed to be entered on in the Second Year, and most of the following subjects:—foundations, cofferdams, bridges, tunnels, roads, and railways; specifications for engineering contracts; water-works for supplying towns; science of the flow of water in orifices, pipes, and canals; drainage of fens by gravitation, and by steam power and other mechanical means; regulation and improvement of rivers; science of the strength of materials and structures; ventilation of dwelling-houses, public buildings, and mines; processes and mechanisms used in foundries and engineering workshops.

The Practice Course includes office work, field work, and engineering excursions.

ANATOMY AND PHYSIOLOGY.—*Professor, Peter Redfern*, M.D. Lond., F.R.C.S.

The Department of Anatomy and Physiology comprises two distinct Courses of Lectures—one on Anatomy and Physiology, the other on Descriptive and Surgical Anatomy, and also the teaching of Anatomy by Dissections throughout the day.

The Course of Anatomy and Physiology includes about 144 meetings, each of an hour's duration, held on the first five days of each week from November to April inclusive. These meetings are for lecture and occasional examinations on the subjects previously considered in the lectures. The lectures include a complete course of the Anatomy and Physiology of the general textures of the body, including the blood, chyle, &c., and a systematic account of the whole of the viscera, treated of as they are associated in groups for the several purposes of digestion, circulation, respiration, urination, innervation, and generation; also the organs of sense. In treating of every part or organ its healthy state is shown by recent dissections and by preparations from the Museum illustrating it in man and animals, its diseased states and actions being referred to at the same time and contrasted with the healthy ones. The textures not visible to the naked eye are shown under a series of achromatic microscopes, so that during the Course every student in the class has an opportunity of judging for himself of the true characters of each part, and, by becoming familiarized with these, of recognising each when changed by disease.

The Course of Practical Anatomy and Anatomical Demonstrations includes:—

1st. Dissections carried on throughout the day under the immediate superintendence of the Professor of Anatomy and Physiology, and the Demonstrator. Each Student is required to be steadily engaged in dissections during the whole Session. For this purpose the supply of subjects is regular and abundant, and thus affords the surest foundation for efficient medical teaching.

2nd. This Course includes the Anatomical Demonstrations, which consist of a complete Course of Descriptive and Surgical Anatomy, commencing with the anatomy of the skeleton and bones, and including the anatomy of the limbs and other parts, excluding that of the viscera and the physiology treated of in the Course of Anatomy and Physiology. The demonstrations are given on each of the first five days of the week, and are about 117 in number in each Session.

Appendix, No. 7.

Digest of Subjects and Courses.

PRACTICE OF MEDICINE—*Professor, James Cuming,* M.D.

The class meets four times each week, from the first week of November to the last of the following April.

An examination is held usually once a fortnight. The Course embraces the principles of Inflammation, Fevers, the diseases, organic and functional, of the viscera of the three great cavities of the human body. In treating of individual diseases, their pathology, semeiology, ætiology, and treatment, are the subjects chiefly dwelt on. Wherever it is possible, pathology is illustrated by the preparations afforded by our Museum, by drawings and plates, or by recent specimens. It may be added that the Professor's present connexion with the Belfast General Hospital adds greatly to the means of making his Course more useful and interesting to students.

THEORY AND PRACTICE OF SURGERY—*Professor, Alexander Gordon,* M.D.

Four Lectures are delivered weekly during the Medical Session. An examination is held each day on the subject of the preceding day's Lecture. Each Course comprises the following subjects:—

Inflammation,
Suppuration,
Mortification,
Erysipelas,
Burns,
Ulcers,
Wounds,
Hæmorrhage,
Diseases of the Arteries,
" Veins,
Fractures of Trunk and Extremities,
" Cranium, Injuries of the Brain and Scalp,
Dislocations,
Diseases of the Joints,
Diseases of the Bursae,
" Bone, benign and malignant,
" the Jaws and Mouth,
" the Fingers and Toes,
" Female Breast,
" Anus and Rectum,
" Testis,
" Hernia,
" Prostate,
" Bladder,
" Eyes,
" Larynx,
Syphilis,
Gonorrhœa,
Stricture.

All the capital and minor operations are performed on the dead subject. The Professor delivers a separate Course of twenty-five Lectures on Operative Surgery.

MATERIA MEDICA—*Professor, James Seaton Reid,* M.D.

This Course includes—

1st. General Pharmacology, or the modes in which medicines act upon the living organism in a state of health.

2nd. Therapeutics, or the modes in which medicines act as curative agents.

3rd. Pharmacy.

4th. Dietetics, a review of the different kinds of food used in health and in disease.

5th. Special Pharmacology, or the history, composition, uses, and modes of administering medicinal agents for the cure of disease.

The Class meets four times each week. An examination is held once every week.

Appendix, No. 7.

Digest of Subjects and Courses.

Midwifery—*Professor, Robert F. Dill,* M.D.

Lectures four times a week during the six winter months consist of following subjects:—

Anatomy of the pelvis, so much as is required for midwifery. Its measurement and pelvimeters.

Contents of the pelvis. The functions of the uterus in its virgin state.

Conception—length of gestation—changes of the uterus and its appendages during gestation.

Growth of child from its earliest seen form until its full parasitic size.

Graafian vesicle and corpus luteum. Fœtus, its circulation, signs of maturity, weight, and length.

Plural births.

Proportion of births and deaths of males to females.

Superfœtation.

Signs of pregnancy.

Signs of approaching labour.

Natural labour, its progress; also the positions and progress of child till its separation from its mother.

Management of natural labour, including the arrangement of the bed and bed-room, and the proper dress and posture of the patient.

Tedious labour, its causes and treatment.

Labour requiring the use of instruments; their application taught on models in the class.

Cæsarean section and Sigaultean operation—how to prevent the fœtus from getting large in uterus.

Premature labour—how to bring it on, and when it is necessary to do so.

Cross-births and their treatment.

Abortion—how to prevent it.

Extra uterine fœtations—how they occur, and their treatment.

Management of women after delivery, and treatment of such accidents and diseases as occur at this period.

Management of children after birth, washing, dressing, food, &c., and the choice of a wet-nurse, and treatment of such accidents as take place at this period, or soon after.

Practical midwifery taught by pupils attending patients in their own houses and in the Lying-in hospital, where Clinical Lectures are given.

Medical Jurisprudence—*Professor, Dr. Hodges.*

The Lectures in this Course are delivered twice weekly during six months. They include an account of the history and chemical investigation of poisons, and of the various subjects respecting which the evidence and assistance of Medical Practitioners may be required in Courts of Law. Experimental illustrations of the methods to be pursued in medico-legal inquiries are given, and frequent examinations held to test the progress of Students. No salary has been allocated to the Teacher of this department, and the duties, at the request of the Council, have, since the opening of the College, been performed by Dr. Hodges.

English Law—*Professor, Echlin Molyneux,* Q.C.

The Professor of English Law, in conducting his department, has constantly kept in view the object of the Select Committee of the House of Commons in recommending the foundation of Chairs in Law in connexion with the Queen's Colleges, which, as they stated in their Report on Legal Education, was not merely to prepare Candidates for the Bar, and for the profession of Attorney and Solicitor, but to raise the standard of legal attainments amongst local practitioners, and especially to provide opportunities of legal education to qualify persons intended to fill administrative situations not strictly legal—a policy which has

Appendix, No. 7.

been since followed up by the Legislature conferring privileges, by way of inducement, on Candidates for the profession of Attorney and Solicitor, who shall avail themselves of these Schools of Law.

Digest of Subjects and Courses.

The Course of the *First* year in this department comprehends the elements of real and personal property, with the principles of conveyancing; that of the *Second* consists of an introduction to the principles and practice of Courts of Equity and the law of Bankruptcy; the *Third* Course includes the common law as incident to contracts, the nature and form of remedies by civil action, and an outline of criminal law, theoretical and administrative, which last completes the Curriculum of instruction required for the attainment of the Diploma of Elementary Law in the Queen's University. The subjects prescribed for Students of the *Fourth* year to qualify them for the Degree of LL.B. embrace a more extended and detailed course of the subjects already enumerated, including the law of wills, powers, evidence, and procedure.

The Lectures are made auxiliary to the cotemporaneous studies directed, and are accompanied by interrogation, independent of the General Examination and that for Honors. Such books, cases, and decisions, and portions of treatises are pointed out for reading as are considered by the Professor most useful in elucidating a branch of learning which is scarcely furnished with books exclusively intended for instruction; and no efforts have been spared to point out the peculiarities of the law in Ireland, whether proceeding from statutes or inherent diversity of practice, or to direct attention to the recent changes which have been introduced into the course of procedure.

From the first opening of the College to the present time the successive classes have spontaneously applied themselves with assiduity and perseverance to the various subjects of legal instruction, and several Non-Matriculated Students have from time to time availed themselves of the privilege afforded by the College Ordinances of attending detached Courses of the Lectures on selected subjects.

Under these circumstances, the Professor is gratified at being able to give the assurance that the Faculty of Law has fully realized the objects of its founders, and that a further extension of its public benefits would ensue upon the adoption by Government of the suggestion made by the same Committee of the House of Commons that a preference should be given to candidates for situations in the Civil Service, not of a purely legal nature, who could produce testimonials of legal attainments from those institutions—a rule which would fully accord with the principle laid down in a recent report of another Committee in relation to the Civil Service.

JURISPRUDENCE AND POLITICAL ECONOMY—*Professor, T. E. Cliffe Leslie*, LL.B.

The subjects embraced in the Course of Lectures on *Jurisprudence* are according to the regulations of this College, (1) the Elements of Jurisprudence, (2) Civil Law, (3) Constitutional Law, (4) Colonial and International Law.

In the treatment of these subjects both the *Historical* and *Philosophical* Methods are followed in the Lectures of the Professor. The Historical Method, for example, is applied in tracing the principal changes through which the laws of England have passed, the assignable causes of such changes, and the degree and manner in which, in comparison with the laws of Continental Europe, the laws of this kingdom have been affected by contact with the principles of Roman legislation. The method of Philosophical Analysis, on the other hand, is applied in investigating the doctrines of the foundation and classification of rights, the several parts and legitimate form of a complete code, the relation of Scientific Jurisprudence to other departments of Social Philosophy, and the means of improving the state of Positive Law as deducible from such considerations.

The subjects which a Course of Lectures on *Political Economy* must embrace are fewer and more definite than those classed under the less advanced and more complicated Science of Jurisprudence. It is the Professor's endeavour to illustrate the principles of Economic Science by the help of those practical applications which will be most interesting and useful in a large commercial town.

APPENDIX No. 8.

Appendix No. 8.
General Class Examination.

GENERAL CLASS EXAMINATION at the end of the SESSION 1867-68.

FIRST YEAR STUDENTS.

THE ENGLISH LANGUAGE.—*Examiner, Professor Yonge.*

ESSAY.

On the Manner and Degree in which the Knowlege of one Language aids the Student in the study of another.

QUESTIONS.

1. What was the language of the British Islands at the time of the Roman invasion? To what extent were the languages spoken in them connected?

2. Give a brief account of the different invasions by which Britain was overrun before the Norman Conquest, of the countries from which the invaders came, and the influence which such events had on the formation of the English language.

3. What rule or principle does Dr. Latham lay down with respect to the early and late stages of a language?

4. What does Hallam say of the attempt to define precisely the era of the commencement of the English Language?

5. After the time of Chaucer, what reigns are spoken of as the eras of the greatest progressive change in the English Language; and what means do we now possess of estimating the effect of those changes?

6. What changes, according to Dr. Latham, are gradually taking place in the usage of the language; and how far are the objections which are occasionally made to the introduction of new words well founded?

7. English is derived, to some extent, from Latin. In its inflexions, in what respects does it most resemble, and in what does it most differ, from that language?

8. How far can we say that the English Language has numbers, cases, genders, &c.

9. What are the different rules which Dr. Latham lays down with respect to the "composition" of words; and what are the most common kinds of composition?

10. What is Dr. Latham's definition of a Proposition, and into how many classes does he divide propositions?

SECOND YEAR STUDENTS.

LOGIC.—*Examiner, Professor M'Cosh.*

1. "The hour strikes;" "Logic is the science of the Laws of Discursive Thought;" "Odious to me is the idea of quarrelling." In these propositions, what are the Notions? what the Subject, and what the Predicate? Are they Percepts, Abstracts, or Concepts? Convert the Propositions.

2. What is the nature of Logical Definition? What are its rules? Examine the following by these rules, and amend where necessary:—"Science is knowledge;" "Logic is the science of reasoning;" "Conversion is the changing of terms in a proposition;" "Propositions are opposed when they differ in quantity or quality;" "Contradictory opposition is the opposition of contradictories;" "A conditional contains two, and only

Appendix, No. 8.

General Class Examination.

two, categorical propositions;" "*Ignoratio Elenchi* is an argument with a wrong conclusion."

3. Unfold the functions of the Phantasm, and of the Name in enabling us to carry on Thought. What are the relative advantages of each?

4. What is Figure? What is the Minor Term? Prove that the Minor Term in the Third Figure is always particular.

5. Why cannot O be a premiss in the First Figure? What premiss can it be in the Second? What premiss in the Third?

6. Some great statesmen are not patriots;
All great statesmen have influence.

What conclusion can be drawn? Indicate the Mood and Figure. Reduce to the First Figure ostensibly and *ad impossible*.

7. State the following both as a Categorical and Conditional, and expose the Fallacy:—"All must approve of this student who consider him diligent, and as you approve of him you must consider him diligent."

8. "The story is probably true, as the person who told it me probably got it from his brother, who probably witnessed the transaction." What is the fallacy involved?

9. State precisely the purpose served by Mathematical Definitions. What reality is there in the Definitions? You may give historical notices of opinions.

10. Can all the facts be ascertained in any department of physical investigation? How, then, are we entitled, from a limited number of facts, to argue a universal law?

11. What is the Method of Residues? What is its Canon? Give an example. Show that it is a modification of the Method of Difference, and that it must become a more powerful instrument of investigation as science advances.

12. What are the steps involved in the Joint Inductive and Deductive Method. Give an example from science.

13. What is the argument from Analogy? What two kinds of error may arise from the use of analogy according to Whately? We are to follow the example of the widow mentioned in the parable, who succeeded with the judge that "feared not God, neither regarded man:" are we also to follow the example of the judge?

14. Of what kind of truth is the Syllogism the Criterion? Show that it is so. What are the *criteria* of other kinds of truth?

N.B.—Those seeking *Honors* should omit queries 4 and 10. Those seeking mere *Pass* may omit queries 5, 6.

GEOLOGY AND MINERALOGY.—*Examiner, Professor Wyville Thomson.*

1. Describe the general chemical composition, the mode of formation, the structure, and the geological position of clay-slate.

2. What are faults in stratified beds, and what are their different varieties?

3. Distinguish by their Palaeontological characters the Ludlow, the Llandovery, and the Llandeilo beds.

4. Describe and refer to their Zoological and Geological positions, the genera Belemnites, Ammonites, Goniatites, and Orthoceras.

5. What is the general chemical composition of the Felspars and of the Hornblendes, and according to what law does the composition of these minerals vary?

6. Describe and state the mode of occurrence of the Trachytic and Doleritic lavas.

ZOOLOGY.—*Examiner, Professor Wyville Thomson.*

1. What is the approximate chemical composition, and what are the physical and vital properties of sarcode?

2. Describe the minute structure of muscle, and state the way in which the ultimate vessels and nerves are distributed to muscular fibre.

3. Give the general structure and the principal subdivisions of the nematelmia and the platyelmia.

4. Contrast the plan of structure of an articulate animal with that of (1) a mollusk, and (2) a vertebrate.

5. What is the amnion? How is the amnion formed? In what vertebrate groups is the amnion present?

6. What is the placenta? How does the placenta originate? What are the principal modifications of the placenta (1) in form, and (2) in structure? In what mammalian groups is the placenta wanting, and in these cases how are the functions of the placenta performed?

7. Describe the structure of the vertebral column, and generally that of the skull, in the lancelet, in the lamprey, in the sturgeon, and in the skate.

8. Give a general classification of the amphibia, and name some of the more remarkable forms, indicating their structural peculiarities.

9. Contrast the general structure of the skull of a bird with that of a snake, of a mammal, and of a frog.

10. What are the characters of the teleostean order of fishes? Name the principal families of this order, and the species in these families which are of the greatest value to man? Sketch generally the geographical distribution of these species.

FIRST YEAR STUDENTS.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

LAW OF PROPERTY.

1. What peculiar objects are attainable by the conveyancer through the introduction of trustees to uses?

2. What is the difference in construction of deeds and wills, as to the creation of estates of inheritance?

3. What is a base fee? and to what extent does it bear analogy to the estate created by grant to a person and the heirs of his body before the statute "de donis?"

4. For what purpose are long terms of years usually created in settlements?

5. What act constitutes the *legal* delivery of a deed, as forming an essential part of its execution?

6. What are the forms prescribed by the statute of wills, 1st Vict., for the execution of such instruments?

7. In what respect does the mode of *registering* a deed differ from its *enrolment*?

8. State the several disabilities for which the statute of limitations makes provision.

9. In what instance is the maternal line preferred to the paternal line in the deduction of title to real estate?

10. Why, in the investigation of title, must evidence of the original patent be given, although intervening links in the title may be omitted on account of their remoteness?

11. In what way alone can personal property be settled so as to create successive interests?

Appendix, No 8.

General Class Examination

12. What is the difference in legal effect, between a mere agreement in writing for the sale of lands and an agreement for the sale of goods?

13. State some of the instances in which the protector of the settlement, under the 4 and 5 Wm. IV., does not correspond with the person whose concurrence with the tenant in tail would be necessary to make a good tenant to the præcipe under the old law.

14. To what extent has the old law which made judgment charges upon land been retained in Ireland?

15. Where there has been an uninterrupted adverse possession of land for 20 years, why is it, nevertheless, necessary to carry back the investigation of title beyond that period?

16. What is the difference in effect between the right of redemption of a mortgage and the right of repurchase upon a conditional sale?

17. In what case is it expedient to mortgage by way of demise instead of assignment?

18. How do the scope and object of the Registry Act of 1866 differ from provisions of the Registry Act of Anne?

19. Under what circumstances will the rights of remaindermen and reversioner expectant on the determination of an estate tail be deemed barred in favour of a person deriving under an assurance which did not so operate at the time of its execution?

20. In what particular is the rule which makes things attached to the freehold the property of the landlord, relaxed by statute *in Ireland?*

21. What is the construction put upon a devise of a term of years to a man and the heirs of his body which saves it from the operation of the rule against tying up property until an indefinite failure of issue?

22. B, a female, possessed of a term of years, marries A. A, the husband, dies; B, the wife, afterward dies; administrations are taken to the husband and wife *severally*: which administrator becomes entitled to the term?

23. A dies unmarried, leaving uncle, paternal grandfather, maternal grandmother, nephew and niece, being the children of a deceased brother, and two grand-nieces, being the grandchildren of a deceased sister; who amongst these are entitled to distributive shares of the personal assets, and in what proportions?

24. What rights of action pass to the executor?

25. Why is the right of escheat, *in Ireland,* exclusively in the Crown?

26. In what instance does an estate *pur autre vie* pass to the personal representative, and when to the heir-at-law?

SECOND YEAR STUDENTS.

EQUITY AND BANKRUPTCY.

1. In the administration of assets, what is the difference between charging the real estate with payment of general legacies, and exonerating the personal estate from payment of legacies? or is there any difference?

2. What alteration has the law undergone by statute with respect to making title to a purchaser of real estate from trustees, with a power sale for payment of legacies?

8. How do you prove that the jurisdiction of Courts of Equity in restraining execution on judgments at law is not an encroachment upon Courts of Law?

4. A, testator, by his will, directs £10,000 to be invested in the purchase of real estate for A. B. A. B. dies in the lifetime of the testator. Is the £10,000 to be converted into real estate for the benefit of the testator's heir-at-law? State the reason of the answer.

Appendix, No. 8.

General Class Examination.

5. What is the true guide in the varied cases arising out of the doctrines of ademption and satisfaction?

6. Terminable lease devised to the use of A. for life, with remainder to B. absolutely. The lease expires in the lifetime of the testator, but he holds the land as tenant from year to year down to his death; upon his death, A. enters into possession of the lands, and obtains an independent lease of them for 31 years. A. having died, B. enters upon the lands, upon which the administrator of A., claiming under the lease for 31 years, brings his ejectment. What are the rights of the litigants respectively? and what is the remedy that will finally establish the right as between them?

7. What were the means at the command of the Court of Chancery for making a good title to a purchaser under its authority; and in what respect were those means inadequate to the end? How were those defects remedied in the structure and powers of the "Landed Estates Court?" Yet what two classes of rights are especially liable to be prejudiced in the exercise of those powers?"

8. Give an instance of the maxim, "Time is not regarded in equity," and state a class of cases in which Courts of Equity consider time as materially influencing the exercise of their jurisdiction. Reconcile those apparent contradictions by stating the principle, which lies at the foundation of all Equity.

9. What is the doctrine of tacking, as recognised by Courts of Equity? In what do the Registry Acts in Ireland interfere with the application of that doctrine?

10. Who are the necessaay parties to a suit in Equity by the assignee of a chose in action to enforce payment of the debt?

11. In favour of what classes will Courts of Equity aid the defective execution of powers? What is the nature of the defect against which such relief will be given?

12. What kind of waste will a Court of Equity restrain, although the party committing it is dispunishable of waste at law?

13. What is the relief given by Courts of Equity to vendors for enforcement of lien for the purchase-money? And as against whom will such lien be enforced?

14. In the investigation of title to real estate of a vendor who has himself purchased the estate under the Bankrupt Court, how is the chain of title to be deduced from the bankrupt?

15. Within what limits, and under what circumstances, is a purchase from a bankrupt protected by the Bankrupt Act, 21 & 22 Vict., chap. 60, as against the assignee under the Bankruptcy?

16. To what extent does the adjudication of the Bankrupt Court declaring a person a bankrupt operate, or is it binding?

17. What judicial procedure is legally requisite before the Chancellor can interfere with the liberty or property of an alleged lunatic?

18. What are the modes by which the guardianship of minors is assumed by the Court of Chancery?

19. What advantage has a Bankrupt over an Insolvent where both have successfully availed themselves of the privileges conferred upon them respectively by the Bankrupt and Insolvent Act?

20. State some instances in which the Courts of Equity interfere with the application of the Statute of Frauds.

THIRD YEAR STUDENTS.

COMMON AND CRIMINAL LAW.

1. What acts are necessary to vest the title in the vendee to articles ordered to be manufactured?

Appendix, No. 8.

General Class Examination.

2. State circumstances under which the right of *property* to goods is vested in the vendee, and yet the right of *possession* remains in the vendor as against the vendee.

3. What quality in a bill of exchange or promissory note is essential to render it negotiable?

4. As between what parties to a bill of exchange or promissory note may the consideration be impeached?

5. Upon what legal principle was the action of ejectment for non-payment of rent reserved upon lease originally founded?

6. What class of covenants in a lease alone confirms a right of action at the suit of lessor against assignee of lessee?

7. What description of produce of land, in a state of growth, may be the subject of valid contract by parol? And what requires a written agreement to satisfy the Statute of Frauds?

8. What kind of fixtures are deemed by the law as the absolute property of the tenant? And when do they cease to be his property on non-removal?

9. What are the Common Law duties and responsibilities of Railway Companies as common carriers?

10. What is the limit of time within which an action for recovery of a debt must be brought? And what acts take such cases out of the statute?

11. What are the periods respectively limited within which rents on lease and rents on tenancies from year to year must be brought?

12. In what respect is ejectment to be preferred to trespass for the purpose of trying title?

13. In what respect does the responsibility of a gratuitous bailee differ from that of a bailee for hire.

14. What actions for wrongs in the lifetime of a testator are his executors precluded from maintaining?

15. What class of cases of personal injuries may be made the subject of criminal prosecution or personal action? And what class of injuries cannot be the subject of both?

16. Tenant in possession under a demise by devisee of a person who died seized of the lands; action of trespass against the tenant by the heir-at-law of the alleged testator; plea by the tenant justifying under the facts above stated; replication by the tenant denying the validity of the alleged will. What proofs must the plaintiff and defendant be prepared to make in support of their respective cases?

17. What are the rights of tenants as to mines and quarries where such are not reserved in the lease?

18. In what class of offences may prosecutions originate in the Court of Queen's Bench?

19. How is the jurisdiction of the Court of Queen's Bench exercised over all other Criminal Courts?

20. To what extent is the Treason Felony Act of wider application than the existing statutes against High Treason?

JURISPRUDENCE AND POLITICAL ECONOMY.—*Examiner, Professor Leslie.*

JURISPRUDENCE.

1. Trace the connexion between feudal restraints on the alienation of lands, and the division between law and equity.

2. Trace the connexion between feudalism, and the division of law into the law of real and personal property.

Appendix, No. 8.

General Class Examination.

3. Explain the causes of the early opposition of the Common Law Courts to the principles of Roman Law.

4. How did this opposition contribute to the separation of Law from Equity?

5. What other causes contributed to the same result?

6. Show the necessity for changes in, and additions to, the law of a country as society advances in wealth, commerce, agriculture, and civilization.

7. Explain the connexion between ignorance of the art of writing, and such institutions as ordeal and trial by combat.

8. Explain the connexion between the spread of the art of writing and treatises such as that of Britton and statutes like the Great Charter.

9. Illustrate the foregoing by reference to the early codes described by Mr. Maine.

10. What does Mr. Maine mean by calling the movement of progressive societies "a movement from status to contract?"

11. What are the advantages and disadvantages of itinerant courts of assize?

12. State the principal arguments of Bentham in favour of having a single judge in each court.

CIVIL LAW AND JURISPRUDENCE.

1. Give a brief account of the relations between English and Roman Law at the following periods, pointing out the effect upon the English legal system at each:—
    (1) The reign of William I.; (2) of Stephen; (3) of Henry II.; (4) of Henry III.; (5) of Edward I.; (6) of Richard II.; (7) succeeding reigns down to that of Henry VIII. inclusive; (8) the subsequent period.

2. The following tendencies have been noticed in the movement of English law: can you point out a connexion between them?—
    (1) A tendency towards the fusion of law and equity.
    (2) A tendency towards the assimilation of the law of real to that of personal property.
    (3) A succession of law-reforming agencies—legal fictions, equity, and legislation.
    (4) A tendency in law originating in the country to become assimilated to law originating in the towns.
    (5) A movement from status to contract.
    (6) A tendency towards the assimilation of English to Roman Law.

3. There seems originally to have been at Rome one form for a conveyance, a contract, and a will. How do you explain this?

4. How do you explain the tardiness of English law to accept the doctrine of prescription?

5. According to Mr. Maine, "the primitive history of criminal law divides itself into four stages?"

6. "The more archaic the code, the fuller and minuter its penal legislation." What reasons does Mr. Maine assign?

POLITICAL ECONOMY.

1. What does Mr. Mill mean by the proposition—"Industry is limited by capital?"

2. Explain and illustrate the proposition—"A demand for commodities is not a demand for labour."

Appendix No. 8.

General Class Examination.

3. Show that unproductive expenditure on the part of the rich upon *commodities*, affects the labouring classes differently, according to the nature of the commodities, and their mode of production.

4. Refute Mr. Senior's doctrine that the absenteeism of landlords from a country like England, which does not export raw produce, is not injurious to the labouring classes.

5. Disprove the doctrine that the rate of wages depends upon the proportion of population to "the aggregate wages fund."

6. On what conditions does it depend whether each additional quantity of food required for an increasing population is obtained at increased expense, or otherwise?

7. State the principal causes which have distributed the increased quantity of money through the world, and determined its effects upon prices, in the last 20 years.

8. What is the relation between the value of money and its cost of production?

9. How is the value of money affected by demand and supply?

History and English Literature.—*Examiner, Professor C. D. Yonge.*

SUBJECT FOR ESSAY.

Give a short sketch of Lyric Poetry, its use, its appropriate subjects, &c., as exemplified in our own and in classical literature.

QUESTIONS.

1. What transitions did the English language go through between the reigns of Edward III. and of Elizabeth? And how far do they, or should they, influence our study of the early English writers?

2. Mention the chief, or some of the chief, classes into which the literature of a nation may naturally be divided; and mention the names of one or two of the most eminent authors in each class in our own nation, with the reigns in which they lived.

3. Give a slight sketch of the history of oratory in the United Kingdom.

4. Give a sketch of the early history of dramatic literature; and mention the points of especial resemblance to, or difference from the ancient dramas which the English stage presents.

5. Give an analysis of the plot of Macbeth (or of King John), with especial reference to the principal female character in either play.

6. Give an analysis of one of Bacon's first thirty Essays; or of Lord Macaulay's Essay on Warren Hastings.

7. Give a short biographical sketch of Pope; commenting upon his right to be looked on as the founder of a new school of poetry; mentioning some of his most distinguished followers; and Byron's opinion of the general merits of both Pope and his school.

8. Give a brief criticism on the genius of Milton, referring not only to Paradise Lost, but also to the Allegro and Penseroso.

MODERN HISTORY.

ENGLAND.

1. What influence were the reign and character of James I. especially calculated to exercise on the general temper of the English people, and consequently on events immediately subsequent?

2. What remarkable impeachments took place in James' reign?

3. What is a Bill of Attainder?

Appendix, No. 8.

General Class Examination.

4. Discuss the question of the dispensing power as claimed by James II.

5. What were the Petition of Right, the Bill of Rights, and the Act of Settlement?

6. What was Burke's chief argument against the policy of the English Government with respect to America in 1774?

7. What were the grounds of the difference between the Government and the Opposition on the Regency Bill in 1788?

8. Who was the Prime Minister in 1731, 1742, 1765, 1782, 1783, 1784? Are there any instances since the accession of George I. in which the man who was unquestionably the head of the Ministry has held some other office than that of First Lord of the Treasury?

FRANCE.

9. Under what circumstances were the States General established? What was their power? What was a *cahier?*

10. What were the circumstances in the internal history of the French Royal Family which facilitated the conquest of France by Henry V.?

11. What were the circumstances of the marriages of Mary of Burgundy and Anne of Brittany?

12. At the end of the 12th century, what portions of the present kingdom of France belonged to the king of France, and what portions to the king of England?

N.B.—No Student is expected to answer more than Eight of the above questions; but it is wished that at least two of them should refer to the History of France.

METAPHYSICS.—*Examiner, Professor M'Cosh.*

1. Explain briefly the nature of the Joint Inductive and Deductive Method, and show more fully that it is by it Metaphysical Investigation is to be prosecuted.

2. What are the views of Reid, Brown, and Hamilton respectively as to the process involved in Sense-Perception? Examine briefly the theory of Brown.

3. What is the distinction drawn between the Primary and Secondary qualities of Matter. For what purpose has it been introduced? Does it serve that purpose?

4.
The swan on still St. Mary's lake
Floats double, swan and shadow.

Suppose that the swan and its shadow were to dispute as to which is the reality, how would you decide the question, in other words what reality would you allot to each?

5. Unfold what is involved in the Recognitive Power. What account do you give of the apparent deception of Memory?

6. What are the elements in Imagination? Is it entitled to be regarded as a separate power? What are the limits to man's power of Imagination?

7. What share has Appetence, natural and acquired, and what share has Idea, in raising up emotion?

8. What elements are involved in Substance? Examine, with historical notices, the doctrine that substance is the *substratum* or support of qualities.

9. What is the distinction between Primitive Knowledge and Primitive Belief? Which seems to be the prior? Give historical notices of opinion.

D

10. What are the principles of Identity, Contradiction, and Excluded Middle? Give historical notices of the application which has been made of these principles.

11. Does a mathematician attempt to prove Mathematical Axioms. Should the metaphysician try to prove them? What then should he do in regard to them?

12. What are the elements involved in Conscience? What in Moral Good? What element in Love makes it virtuous?

---

1. What is the province allotted by Bacon to Physics? What to Metaphysics? What does he affirm, and what deny, in regard to Final Cause?

2. When did Descartes live? Name his principal philosophical works. What seems to be his Method? Examine his *Cogito ergo Sum.*

3. What is Knowledge, according to Locke? What Intuition? Examine his views on these subjects.

4. State and examine the views of Leibnitz as to Space and Time.

5. What is Hume's theory of Causation, objective and subjective? How did Reid and Kant respectively meet Hume on this point? You may offer comments.

6. "If every thing has a cause, then the Divine Being must have a cause." Show that by giving the proper account of Causation, this objection may be avoided.

7. State, and rigidly test, Reid's principles of Common Sense relating to Contingent Truths.

8. State and examine Brown's account of Consciousness.

9. Who held that all our ideas are derived from Sensation? Who that they are derived from Sensation and Reflection? What are the ideas which are declared by some to be derived from neither of these sources? How are these ideas supposed to be generated?

10. What is the difference between Primary and Secondary Springs of Action or Motives? Who held that pleasures and pains are the only Primary Motives that determine the will? Examine their doctrine.

11. Name the philosophers who represent the Moral Power as Emotion. Examine their doctrine.

12. State and contrast with historical notices, the Platonic and Association Theories of Beauty.

HONOR LOGIC.—*Examiner, Professor M'Cosh.*

1. Name distinguished Conceptualists. Bring out fully what is true in their doctrine, and explain what is meant by Conception.

2. What is meant by Private Conceptions? What by Immediate Inferences by Privative Conceptions? Given the proposition, "No brutes are responsible," what Immediate Inferences can be drawn from it by Privative Conceptions? Examine the statement that "Immediate Inferences are not conclusions, nor fresh acts of judgment, but the original expressed in other words."

3. Suppose that we admit that Singular Notions and Abstract Notions are different from General Notions, what modification does this require us to make on the Analytic of Logical Forms in regard to the Proposition and Argument?

4. Give as full and correct an account as you can of what seem to be the Ultimate Laws of Thought regulating Reasoning.

5. What are the supposed advantages of Hamilton's Scheme of Syllogistic Notation? Express an argument in the Third Figure by means of that Notation.

Appendix, No. 8.

General Class Examination.

6. Given either premiss particular, prove that the middle term is but once universal.

7. Give an argument expressed in the form both of Extension and Comprehension. Show the difference between the two, and discuss the question whether reasoning is, spontaneously and primarily, in Extension or comprehension.

8. Give an exact account of the Sorites. What is the formula for ascertaining the number of conclusions? Show, by means of an example, what is the difference between the Goclenian and the Aristotelian Sorites.

9. State and examine Mr. Mill's doctrine as to Mathematical Demonstration.

10. What seem to be the elements involved in the System of Nature? What is the character of the Order falling under our notice in Nature? How may we discover it?

11. What is the distinction between the Law of Causation and the Law of the Uniformity of Nature? Is a miracle contrary to the Law of Causation?

12. In what ways may a Law of Causation admit of explanation? Give examples of each of these ways.

N.B.—Those seeking mere Pass may substitute any of the following for a like number of the foregoing:

α. What is the nature and what are the Rules of Definition; How may the Generalized Concrete Notion be defined?

β. What are the Predicable-classes of Aristotle? What of Porphyry? Can the distinctions between these be thoroughly carried out? State and illustrate Thomson's distinction.

γ. Give Hamilton and Thomson's Table of Judgments, with concrete examples. Examine the claims of U and Y to be reckoned as distinct forms.

δ. Define Cause as the same requires to be understood in the investigation of nature. Show that Causes always imply two or more agents, and that effects are also dual or plural. Explain what is meant by "conditions" or "occasions," and "incidents."

ε. What are Methods of Agreement and difference? To what cases are they respectively applicable?

---

1. To whom do we owe the doctrine of "man the measure of all things?" Has it appeared in modern times? If so, in what forms? What seems to be its meaning? Examine it.

2. In what relation did the Idea of Plato stand to the Sensible Universe?

3. Name the philosophic works of Aristotle. What is meant by δύναμις, ἐντελέχεια, ἐνέργεια, ἔργον, ἕξις, and ἀρετή?

4. What precisely is Descartes' doctrine of Innate Ideas? What truth seems to be in it, and what error?

5. Did or did not Locke hold the Ideal Theory of Sense-Perception? Give historical notices of the discussion on this point.

6. What are the chief topics discussed by Francis Hutcheson, and what his views on each of these?

7. What doctrines of Hume's are sceptical? Indicate the mode in which his scepticism is to be met, and give historical notices of the way in which he has been met.

8. What are the characteristics of the Scottish School? Who best exhibit these characteristics? Did Brown possess them?

9. Hamilton speaks of persons analyzing not only our belief in the relation of effect and cause, but even the primary logical laws, into the

D 2

Appendix, No. 8.

General Class Examination.

principle of association. What is meant by the primary logical laws? Name the philosophers who have made the attempt referred to. State their argument, and examine it.

10. What is Hypothetical Realism? Indicate the forms which it has assumed. What objections are taken to it?

11. What is Hamilton's doctrine of Causation, objective and subjective? Examine it.

12. What is Kant's classification of the Theistic Arguments? Examine his objections to the Physico-Theological.

N.B.—Those aiming at mere Pass may substitute any number of the following for a like number of the above:—

α. Give a tabulated statement of the ancient Greek Philosophers.

β. What is Hamilton's division of Mental Phenomena? What his classification of the Phenomena of Knowledge. You may offer remarks.

γ. In what sense may all the Senses be considered as modifications of Touch? May Touch be considered as embracing a variety of senses.

δ. What are the tests of Intuition? Give some historical notices of Necessity as a Test.

ε. What is Hamilton's Law of Redindegration? Can all the phenomena of Association be explained by it?

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

[NOTE.—First Year Students are required to answer Questions 1, 2, 3, 4, 5; Second Year, 2, 4, 5, 6, 7; and Third and Fourth Year, 4, 5, 6, 7, 8.]

1. State the position, connexions, and relations of the parotid gland and its duct.

2. Mention the human cartilages and fibro-cartilages in the order of their proneness to ossification and particularize those in which ossification has not been observed. State any known causes of ossification in particular instances.

3. What are the characters of parotid and of submaxillary saliva; of hepatic and of cystic bile; and of the urine of carnivorous and of herbivorous animals?

4. By what means can the nature and amount of food required by an adult man be estimated?

5. Describe the connective tissue of tendons, of the umbilical cord, and the reticulum of the brain: and contrast these forms of that tissue with each other.

6. Describe the processes of growth in the length and width of the long bones.

7. How can the force, and the rapidity, with which the current of blood moves in the arteries be respectively estimated? Name and describe the instruments which have been used for these purposes.

8. Describe the position, connexions, and relations of the membranous cochlea of the ear.

PRACTICAL ANATOMY.—*Examiner, Dr. Redfern.*

[NOTE.—In addition to making a dissection during a separate period of three hours, First Year Students are required to answer questions 1, 2, 3, 4; Second Year, 2, 3, 5, 6; and Third and Fourth Years, 1, 2, 6, 7, 8.].

1. Give a careful description of the capsular ligaments of the hip and shoulder joints.

Appendix, No. 3.

General Class Examination.

2. State at what joints the movements of inversion and eversion of the foot take place; the nature of those movements, and the muscles which produce them.

3. State the action and the relations of the sterno-mastoid muscle.

4. Describe the course, relations, branches, and anastomoses of the external plantar artery.

5. Mention the cutaneous nerves of the lower limb in their order from above downwards, and state the extent of surface supplied by each.

6. Mention each muscle of the gluteal region and thigh, with its nerve and the part of the muscle at which the nerve enters.

7. What are the most marked changes in the appearance of the superior maxillary, the palate, and the temporal bones during their development.

8. Mention the most important unusual arrangements in the arch of the aorta and its branches; of the obturator artery; and those of the upper arm and thigh.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.—*Examiner, Dr. E. F. Dill.*

1. Define the terms, *conception, gestation,* and *parturition.*

2. State the length of time required to complete the term of *gestation.* How is it usually calculated?

3. What are the signs and symptoms of *pregnancy?* State the order of their appearance and their value.

4. How may *pregnancy,* at the seventh month, be distinguished from *ascites,* and *ovarian enlargement?*

5. What is *Denman's* classification of labours? What are the different stages of labour?

6. How may vertex presentations be diagnosed? How may the first and third positions, in head presentations, be distinguished?

7. What are the different forms of uterine hemorrhage? Describe the management of each, and the *modus operandi* of the agents.

8. How may a breech presentation be distinguished from a shoulder and arm presentation? When the hand has descended, how is the right distinguished from the left, and how does either indicate the position of the child in utero?

9. Describe the peculiarities of the fœtal circulation.

10. State the usual order and period of appearance of the several pairs of milk teeth.

MEDICAL JURISPRUDENCE.—*Examiner, Dr. Hodges.*

1. State the smallest quantities of the following poisons which have been known to produce death: Tartar Emetic, Arsenious Acid, Corrosive Sublimate, Opium, Strychnine.

2. How are wounds inflicted on the living body to be distinguished from those produced after death?

3. Describe the method of applying the Hydrostatic test.

4. What are the symptoms of poisoning by Aconite?

5. How is Dialysis employed for the separation of poisons in liquids containing organic matters?

6. State the degree of solubility of Arsenious Acid, the form of its crystals when sublimed, and the reactions of its solution with Sulphuretted Hydrogen, Ammonia-Nitrate of Silver and Ammonia-Sulphate of Copper.

7. How is Chloroform to be detected in the contents of the stomach?

Appendix, No. 8.

General Class Examination.

MEDICAL STUDENTS.

French.—*Examiner, Professor Meissner.*

I.—Translate into French:—

England is the southern, and Scotland the northern part of the celebrated island called Great Britain. England is greatly larger than Scotland, and the land is much richer, and produces better crops. There are also a great many more men in England, and both the gentlemen and the country people are more wealthy, and they have better food and clothing than those in Scotland. The towns, also, are much more numerous, and more populous.

Scotland, on the contrary, is full of hills and huge moors and wildernesses, which bear no corn, and afford but little food for flocks of sheep or herds of cattle. But the level ground that lies along the great rivers is more fertile, and produces good crops. The natives of Scotland are accustomed to live more hardily in general than those of England. The cities and towns are fewer, smaller, and less full of inhabitants than in England. But, as Scotland possesses great quarries of stone, the towns are commonly built of that material, which is more lasting, and has a grander effect to the eye, than the bricks used in England.

II.—Translate into English:—

M. Bixio, un des hommes politiques les plus libéraux et les plus intègres de notre époque, était étudiant en médecine à Paris, lorsqu'il fit la connaissance d'Alexandre Dumas sur les barricades de juillet 1830. Il se passionnait pour toutes les questions scientifiques, parfois au point d'oublier les sentiments d'humanité que personne ne possédait à un plus haut degré que lui.

Alexandre Dumas eut à se battre en duel avec M. Gaillardet, à cause du drame *la tour de Nesle* dont chacun d'eux pretendait être le principal auteur. Il choisit Bixio pour témoin. Déjà les deux adversaires étaient placés en face l'un de l'autre, le pistolet à la main, lorsque Bixio leur fit signe d'arrêter et s'approcha de Dumas, afin de lui tâter le pouls. "Tiens!" dit-il, "it bat comme d'habitude. Tu as du courage et du sang-froid, Alexandre; tue-moi ce gaillard-là."—"Tu lui en veux donc bien?" cria Dumas, tout surpris; "ton amitié chaleureuse me fait du bien."—"Oh! ce n'est pas pour cela," répondit le jeune Bixio; "mais j'ai lu récemment dans un ouvrage de physiologie qu'un homme, atteint d'une balle en pleine poitrine, tourne autour de lui-même avant de tomber, et je voudrais savoir si c'est vrai."

III.—Translate into English:—

Le soleil disparaît dans sa couche embrasée;
L'azur du ciel a pris une teinte rosée;
Après les feux du jour, qui brûlaient le faucheur,
Voici le crépuscule apportant la fraîcheur.
Que la soirée est celle, et comme on se sent vivre!
L'herbe coupée exhale un parfum qui m'enivre;
Ces dernières lueurs, qui flottent au couchant,
Donnent à la campagne un aspect plus touchant,
Et mon esprit ému suit le jour qui s'achève,
Par delà l'horizon, dans le pays du rêve
Oh! quand donc aurez-vous votre accomplissement,
Rêves qui m'agitez, rêves de dévoûment!
Dois-je perdre en soupirs cette force de vie
Qui par des actions voudrait être assouvie!
Ne puis-je concentrer dans un noble dessein
Ces stériles désirs qui me gonflent le sein! F. Ponsard.

Appendix, No. 8.

General Class Examination

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What is meant by the specific heat of a body, and what relation exists between the specific heats and atomic weights of the elementary bodies?

2. Describe the spectra of sodium, thallium, cæsium, rubidium, and potassium. Describe also the appearance of the ordinary spectrum when passed (*a*) through nitrous acid gas, (*b*) through a solution of hæmatosine.

3. Write the formulas of sulphuric acid and of nitric acid according to the new notation, and state why the former contains two atoms of hydrogen, and the latter only one.

4. Calculate the theoretical density of the vapour of carbon, assuming an atom of carbonic acid to correspond to two volumes.

5. How is cyanogen prepared, and what are its leading properties?

6. Describe the preparation and properties of the arsenious and arsenic acids.

7. How is an organic analysis conducted?

8. Write the formulas of the more important bodies belonging to the ethyl series.

9. What is the chemical constitution of the fatty bodies? State briefly the sources of the butyric, valerianic, and stearic acids.

10. Give a general account of the volatile organic alcalies, and describe the preparation of aniline and coneine.

FIRST YEAR STUDENTS.

GREEK.—*Examiner, Professor M'Douall.*

I. Translate perspicuously the annexed extract from the *Cyropaedeia* of XENOPHON :—

Κῦρος δ' ἐπὶ μὲν ἄλλα καθίστη[1] ἄλλους ἐπιμελητάς.[2] καὶ ἦσαν αὐτῷ καὶ προσόδων[2] ἀποδεκτῆρες[2] καὶ δαπανημάτων[2] δοτῆρες[2] καὶ ἔργων ἐπιστάται[2] καὶ κτημάτων φύλακες καὶ τῶν εἰς τὴν δίαιταν[2] ἐπιτηδείων[2] ἐπιμεληταί· καὶ ἵππων δὲ καὶ κυνῶν[1] ἐπιμελητὰς καθίστη, οὓς ἐνόμιζε καὶ ταῦτα τὰ βοσκήματα[2] βέλτιστ' ἂν παρέχειν αὐτῷ χρῆσθαι. οὓς δὲ συμφύλακας τῆς εὐδαιμονίας[2] οἱ[1] ᾤετο[1] χρῆναι[1] ἔχειν, οὗτοι ὅπως ὡς βέλτιστοι ἔσοιντο, οὐκέτι τούτου τὴν ἐπιμέλειαν ἄλλοις προσέταττεν ἀλλ' αὐτοῦ[1] ἐνόμιζε τοῦτο ἔργον εἶναι. ᾔδει[1] γὰρ ὅτι, εἴ τι μάχης ποτὲ δεήσοι,[1] ἐκ τούτων καὶ παραστάτας καὶ ἐπιστάτας ληπτέον[1] εἴη, σὺν οἷσπερ οἱ μέγιστοι κίνδυνοι. μὴ ὄντων μὲν οὖν οἵων ἔδει, δι' ὧν αἱ μέγισται καὶ πλεῖσται πράξεις ἤμελλον εἶναι, κακῶς ἡγεῖτο τὰ αὐτοῦ ἕξειν· εἰ δ' οὗτοι εἶεν[1] οἵους δέοι, πάντα ἐνόμιζε καλῶς ἔσεσθαι. ἐνέδυ[1] μὲν οὖν οὕτω γνοὺς[1] εἰς ταύτην τὴν ἐπιμέλειαν· ἐνόμιζε δὲ τὴν αὐτὴν καὶ αὐτῷ ἄσκησιν εἶναι τῆς ἀρετῆς. οὐ γὰρ ᾤετο οἷόν τε[1] εἶναι μὴ αὐτόν τινα ὄντα οἷον δεῖ ἄλλους παρορμᾶν[2] ἐπὶ τὰ καλὰ καὶ ἀγαθὰ ἔργα. ὡς δὲ ταῦτα διενοήθη,[1] ἡγήσατο σχολῆς[2] πρῶτον δεῖν, εἰ μέλλοι δυνήσεσθαι τῶν κρατίστων ἐπιμελεῖσθαι. τὸ μὲν οὖν προσόδων ἀμελεῖν[2] οὐχ οἷόν τε ἐνόμιζεν εἶναι, προνοῶν ὅτι πολλὰ καὶ τελεῖν ἀνάγκη ἔσοιτο εἰς μεγάλην ἀρχήν· τὸ δ' αὖ, πολλῶν κτημάτων ὄντων, ἀμφὶ ταῦτα αὐτὸν ἀεὶ ἔχειν ᾔδει ὅτι ἀσχολίαν[2] παρέξοι τῆς τῶν ὅλων σωτηρίας ἐπιμελεῖσθαι. οὕτω δὴ σκοπῶν, ὅπως ἂν τά τε οἰκονομικὰ καλῶς ἔχοι καὶ ἡ σχολὴ γένοιτο, κατενόησέ πως τὴν στρατιωτικὴν σύνταξιν.

Appendix, No. 8.

General Class Examination.

II.—1. Parse fully and accurately every word to which the figure (1) is annexed.

2. Derive or decompound every word to which the figure (2) is annoxed, noticing in some instances the rules of word-building which are exemplified.

3. Point out and explain noteworthy constructions and idioms.

1.—Translate perspiouously these lines from the IXth Book of the *Ilias* :—

ἀλλ', Ἀχιλεῦ, δάμασον θυμὸν μέγαν. οὐδέ τί σε χρὴ
νηλεὲς[2] ἦτορ ἔχειν. στρεπτοὶ δέ τε καὶ θεοὶ αὐτοί,
τῶνπερ[1] καὶ μείζων ἀρετὴ τιμή τε βίη τε·
καὶ μὴν τοὺς θυέεσσι[1] καὶ εὐχωλῇς[2] ἀγανῇσιν
λοιβῇ τε κνίσῃ τε παρατρωπῶσ'[1] ἄνθρωποι
λισσόμενοι, ὅτε κέν τις ὑπερβήῃ[1] καὶ ἁμάρτῃ.[1]
καὶ γάρ τε[1] Λιταί εἰσι Διὸς κοῦραι μεγάλοιο,
χωλαί τε ῥυσαί τε παραβλῶπές[2] τ' ὀφθαλμώ,[1]
αἵ ῥά τε καὶ μετόπισθ'[2] Ἄτης[2] ἀλέγουσι κιοῦσαι.[1]
ἡ δ' Ἄτη σθεναρή τε καὶ ἀρτίπος·[2] οὕνεκα[2] πάσας
πολλὸν[1] ὑπεκπροθέει φθάνει[1] δέ τε πᾶσαν ἐπ' αἶαν
βλάπτουσ' ἀνθρώπους· αἳ δ' ἐξακέονται ὀπίσσω.
ὃς μέν τ' αἰδέσεται κούρας Διὸς ἆσσον[1] ἰούσας,
τὸν δὲ μέγ' ὤνησαν[1] καί τε κλυον[1] εὐχομένοιο·
ὃς δέ κ' ἀνήνηται[1] καί τε στερεῶς ἀποείπῃ,[1]
λίσσονται δ'[1] ἄρα ταί[1] γε Δία Κρονίωνα κιοῦσαι
τῷ Ἄτην ἅμ' ἕπεσθαι, ἵνα βλαφθεὶς ἀποτίσῃ.[1]
ἀλλ', Ἀχιλεῦ, πόρε καὶ σὺ Διὸς κούρῃσιν ἕπεσθαι
τιμήν, ἥ τ' ἄλλων περ ἐπιγνάμπτει[2] νόον ἐσθλῶν.
εἰ μὲν γὰρ μὴ δῶρα φέροι τὰ τ' ὄπισθ' ὀνομάζοι
Ἀτρεΐδης, ἀλλ' αἰὲν ἐπιζαφελῶς[2] χαλεπαίνοι,
οὐκ ἂν ἐγώ γέ σε μῆνιν ἀπορρίψαντα κελοίμην[1]
Ἀργείοισιν ἀμυνέμεναι[1] χατέουσί[1] περ ἔμπης·[2]
νῦν δ' ἅμα τ' αὐτίκα πολλὰ διδοῖ[1] τά τ' ὄπισθεν ὑπέστη,
ἄνδρας δὲ λίσσεσθαι ἐπιπροέηκεν[1] ἀρίστους,
κρινάμενος κατὰ λαὸν Ἀχαιϊκόν, οἵ τε σοὶ αὐτῷ
φίλτατοι Ἀργείων. τῶν μὴ σύγε μῦθον ἐλέγξῃς
μηδὲ πόδας. πρὶν δ' οὔτι νεμεσσητὸν[2] κεχολῶσθαι.[1]

II.—1. Parse accurately every word to which the figure (1) is aunexed, giving the Attio form whenever it differs from the Homerio.

2. Derive or decompound every word to which the figure (2) is annexed.

3. Explain noteworthy constructions and idioms.

4. Chiefly illustrate the allegory in lines 7–19.

SECOND YEAR STUDENTS,

I.—All will translate the following extract from *Herodotus* :—

“ὦ βασιλεῦ, μὴ λεχθεισέων[1] μὲν γνωμέων ἀντιέων[1] ἀλλήλῃσι οὐκ ἔστι τὴν ἀμείνω αἱρεόμενον ἑλέσθαι, ἀλλὰ δεῖ τῇ εἰρημένῃ χρῆσθαι· λεχθεισέων δε ἔστι· ὥσπερ τὸν χρυσὸν τὸν ἀκήρατον[2] αὐτὸν μὲν ἐπ' ἑωυτοῦ[1] οὐ διαγινώσκομεν, ἐπεὰν δὲ παρακρίνωμεν ἄλλῳ χρυσῷ, διαγινώσκομεν τὸν ἀμείνω.

Appendix, No. 8.

General Class Examination.

. . . . . ζεύξας φὴς τὸν. Ἑλλήσποντον ἐλᾶν[1] στρατὸν διὰ τῆς Εὐρώπης ἐς Ἑλλάδα. καὶ δὴ καὶ συνήνεικε[1] ἤ τοι κατὰ γῆν ἢ κατὰ θάλασσαν ἑσσωθῆναι[1] ἢ καὶ κατ' ἀμφότερα. οἱ γὰρ ἄνδρες λέγονται εἶναι ἄλκιμοι. πάρεστι δὲ καὶ σταθμώσασθαι,[2] εἰ στρατιήν[1] γε τοσαύτην σὺν Δάτι καὶ Ἀρταφέρνεϊ ἐλθοῦσαν ἐς τὴν Ἀττικὴν χώρην[1] μοῦνοι Ἀθηναῖοι διέφθειραν· οὐκ ὦν[1] ἀμφοτέρῃ[1] σφι[1] ἐχώρησε. ἀλλ', οὔτοι ἢν τῇσι νηυσὶ ἐμβάλωσι[1] καὶ νικήσαντες ναυμαχίῃ πλώωσι[1] ἐς τὸν Ἑλλήσποντον καὶ ἔπειτεν[1] λύσωσι τὴν γέφυραν, τοῦτο δὴ, βασιλεῦ, γίνεται δεινόν. . . . . ἀλλ' ἐμοὶ πείθεο· νῦν μὲν τὸν σύλλογον τόνδε διάλυσον, αὖτις[1] δέ, ὅταν τοι δοκέῃ, προσκεψάμενος[1] ἐπὶ σεωυτοῦ προαγόρευε τά[1] τοι[1] δοκέει εἶναι ἄριστα. τὸ γὰρ εὖ βουλεύεσθαι κέρδος μέγιστον εὑρίσκω ἐόν.[1] εἰ γὰρ καὶ ἐναντιωθῆναί τι θέλει, βεβούλευται μὲν οὐδὲν ἕσσον[2] εὖ, ἕσσωται δὲ ὑπὸ τῆς τύχης τὸ βούλευμα· ὁ δὲ βουλευσάμενος αἰσχρῶς, εἴ οἱ ἡ τύχη ἐπίσποιτο,[1] εὕρημα εὕρηκε, ἕσσον δὲ οὐδέν οἱ[1] κακῶς βεβούλευται. ὁρᾷς τὰ ὑπερέχοντα ζῶα ὡς κεραυνοῖ[1] ὁ θεὸς οὐδὲ ἐᾷ φαντάζεσθαι, τὰ δὲ σμικρὰ οὐδέν μιν κνίζει, ὁρᾷς δὲ ὡς ἐς οἰκήματα τὰ μέγιστα αἰεὶ καὶ δένδρεα[1] τὰ τοιαῦτα ἀποσκήπτει τὰ βέλεα. φιλέει γὰρ ὁ θεὸς τα ὑπερέχοντα πάντα κολούειν.

Candidates for Honors will translate the following passage likewise :—

ἐζεύγνυσαν δὲ [τὼ γεφύρα] πεντηκοντέρους[2] καὶ τριήρεας[2] συνθέντες, ὑπὸ μὲν τὴν πρὸς τοῦ Εὐξείνου Πόντου ἑξήκοντά τε καὶ τριηκοσίας,[1] ὑπὸ δὲ τὴν ἑτέρην τεσσερεσκαίδεκα[2] καὶ τριηκοσίας, τοῦ μὲν Πόντου ἐπικαρσίας[2] τοῦ δὲ Ἑλλησπόντου κατὰ ῥόον, ἵνα ἀνοκωχεύῃ.[2] συνθέντες δὲ ἀγκύρας κατῆκαν[1] περιμήκεας,[1] τῆς μὲν πρὸς τοῦ Πόντου τῶν ἀνέμων εἵνεκεν[1] τῶν ἔσωθεν ἐκπνεόντων, τῆς δὲ ἑτέρης τῆς πρὸς ἑσπέρης[1] τε καὶ τοῦ Αἰγαίου ζεφύρου τε καὶ νότου εἵνεκεν. διέκπλοον δὲ ὑπόφαυσιν[2] κατέλιπον τῶν πεντηκοντέρων καὶ τριηρέων τριχοῦ,[1] ἵνα καὶ ἐς τὸν Πόντον ἔχῃ ὁ βουλόμενος πλώειν[1] πλοίοισι λεπτοῖσι καὶ ἐκ τοῦ Πόντου ἔξω. ταῦτα δὲ ποιήσαντες κατέτεινον ἐκ γῆς στρεβλοῦντες[2] ὄνοισι ξυλίνοισι τὰ ὅπλα, οὐκέτι χωρὶς ἑκάτερα τάξαντες, ἀλλὰ δύο μὲν λευκολίνου[2] δασάμενοι[1] ἐς ἑκατέρην τέσσερα δὲ τῶν βυβλίνων. παχύτης μὲν ἦν ἡ αὐτὴ καὶ καλλονή, κατὰ λόγον δὲ ἦν ἐμβριθέστερα[2] τὰ λίνου, τοῦ[1] τάλαντον ὁ πῆχυς εἷλκε.[1] ἐπειδὴ δὲ ἐγεφυρώθη ὁ πόρος, κορμοὺς[2] ξύλων καταπρίσαντες[1] καὶ ποιήσαντες ἴσους τῆς σχεδίης[2] τῷ εὔρεϊ κόσμῳ ἐπετίθεσαν κατύπερθε[1] τῶν ὅπλων τοῦ τόνου·[2] θέντες δὲ ἐπεξῆς[1] ἐνθαῦτα[1] αὖτις[1] ἐπεζεύγνυον. ποιήσαντες δὲ ταῦτα ὕλην ἐπεφόρησαν·[2] κόσμῳ δὲ θέντες καὶ τὴν ὕλην γῆν ἐπεφόρησαν· κατανάξαντες[2] δὲ καὶ τὴν γῆν φραγμὸν[2] παρείρυσαν[2] ἔνθεν καὶ ἔνθεν, ἵνα μὴ φοβέηται τὰ ὑποζύγια τὴν θάλασσαν ὑπερορέοντα[1] καὶ οἱ ἵπποι.

II.—1. All are requested to parse accurately every word in the former passage to which the figure (1) is annexed,—giving the Attic form wherever it differs from the Ionic,—and to derive or decompound every word to which the figure (2) is annexed.

2. Candidates for honors are requested to give the Attic form of every word in the latter passage to which the figure (1) is annexed, or, if in any case the word be not used in Attic prose, to substitute its Attic equivalent,—to derive or decompound every word in the latter passage to which the figure (2) is annexed,—and to point out and explain noteworthy constructions and idioms in either passage.

Appendix, No. 8.

General Class Examination.

I.—All will tranelate these linee from the IXth Book of the *Odysseia*:—

ἧ[1] καὶ ἀνακλινθεὶς[1] πέσεν ὕπτιος·[2] αὐτὰρ ἔπειτα
κεῖτ' ἀποδοχμώσας[2] παχὺν αὐχένα, κὰδ[1] δέ μιν[1] ὕπνος
ᾕρει πανδαμάτωρ· φάρυγος δ' ἐξέσσυτο[1] οἶνος
ψωμοί τ' ἀνδρόμεοι·[2] ὃ[1] δ' ἐρεύγετο[1] οἰνοβαρείων.[2]
καὶ τότ' ἐγὼ τὸν μοχλὸν ὑπὸ σποδοῦ ἤλασα πολλῆς,
εἵως[1] θερμαίνοιτο· ἔπεσσί τε πάντας ἑταίρους
θάρσυνον, μή τίς μοι ὑποδδείσας[1] ἀναδυίη.[1]
ἀλλ', ὅτε δὴ τάχα μοχλὸς ἐλάινος ἐν πυρὶ μέλλεν
ἅψεσθαι χλωρός περ ἐὼν[1] διεφαίνετο δ' αἰνῶς,
καὶ τότ' ἐγὼν ἆσσον[1] φέρον[1] ἐκ πυρός, ἀμφὶ δ' ἑταῖροι
ἵσταντ'· αὐτὰρ θάρσος ἐνέπνευσεν μέγα δαίμων.
οἳ μὲν μοχλὸν ἑλόντες ἐλάινον ὀξὺν ἐπ' ἄκρῳ
ὀφθαλμῷ ἐνέρεισαν·[1] ἐγὼ δ' ἐφύπερθεν ἀερθεὶς[1]
δίνεον. ὡς δ' ὅτε τις τρυπῷ[1] δόρυ νήιον[2] ἀνὴρ
τρυπάνῳ, οἱ δέ τ'[1] ἔνερθεν ὑποσσείουσιν ἱμάντι
ἁψάμενοι ἑκάτερθε,—τὸ δὲ τρέχει ἐμμενὲς[2] αἰεί,—
ὣς τοῦ ἐν ὀφθαλμῷ πυριήκεα[2] μοχλὸν ἑλόντες
δινέομεν, τὸν δ' αἷμα περίῤῥεε θερμὸν ἐόντα·
πάντα δέ οἱ[1] βλέφαρ' ἀμφὶ καὶ ὀφρύας εὗσεν ἀϋτμὴ[2]
γλήνης καιομένης, σφαραγεῦντο[1] δέ οἱ πυρὶ ῥίζαι.
ὡς δ' ὅτ' ἀνὴρ χαλκεὺς πέλεκυν μέγαν ἠὲ σκέπαρνον[2]
εἰν ὕδατι ψυχρῷ βάπτῃ μεγάλα ἰάχοντα,
φαρμάσσων,[2]—τὸ γὰρ αὖτε σιδήρου γε κράτος ἐστίν,—
ὣς τοῦ σίζ' ὀφθαλμὸς ἐλαινέῳ[1] περὶ μοχλῷ.
σμερδαλέον[2] δὲ μέγ' ᾤμωξεν, περὶ δ' ἴαχε πέτρη·
ἡμεῖς δὲ δείσαντες ἀπεσσύμεθ'.[1] αὐτὰρ ὃ μοχλὸν
ἐξέρυσ' ὀφθαλμοῖο πεφυρμένον αἵματι πολλῷ.
τὸν μὲν ἔπειτ' ἔῤῥιψεν ἀπὸ ἕο[1] χερσὶν ἀλύων.

And Candidates for Honors will further translate those which follow:—

ἄρσενες ὄιες[1] ἦσαν ἐΰτρεφέες δασύμαλλοι,
καλοί τε μεγάλοι τε, ἰοδνεφὲς[2] εἶρος ἔχοντες·
τοὺς ἀκέων[2] συνέεργον[1] ἐϋστρεφέεσσι λύγοισιν,
τῇς ἔπι Κύκλωψ εὗδε, πέλωρ ἀθεμίστια[2] εἰδός,
σύντρεις αἰνύμενος· ὁ μὲν ἐν μέσῳ ἄνδρα φέρεσκεν,[1]
τὼ δ' ἑτέρω ἑκάτερθεν ἴτην[1] σώοντες ἑταίρους.
τρεῖς δὲ ἕκαστον φῶτ' ὄιες φέρον· αὐτὰρ ἐγώ γε—
ἀρνειὸς γὰρ ἔην μήλων ὄχ' ἄριστος ἁπάντων—
τοῦ κατὰ νῶτα λαβὼν λασίην ὑπὸ γαστέρ' ἐλυσθεὶς[1]
κείμην· αὐτὰρ χερσὶν ἀώτου θεσπεσίοιο[2]
νωλεμέως[2] στρεφθεὶς ἐχόμην τετληότι[1] θυμῷ.

II.—1. Parse accurately and fully every word to which the figure (1) is annexed.

2. Derive or decompound every word to which the figure (2) is annexed.

3. Restore to certain words in the extracts euch letters—not printed above—as are suggested by the metre or by analogy or by tradition to have etill belonged to them in the Homeric age.

THIRD YEAR STUDENTS.

I.—Tranelate perspicuously these sentences from the *Politeia* of Platon:—

1. ὁ δ', εἰς τὸ μέσον φθεγξάμενος, "τίς," ἔφη, "ὑμᾶς πάλαι φλυαρία ἔχει, ὦ Σώκρατες; καὶ τί εὐηθίζεσθε πρὸς ἀλλήλους ὑποκατακλινόμενοι[1] ὑμῖν αὐτοῖς; ἀλλ', εἴπερ ὡς ἀληθῶς βούλει εἰδέναι τὸ δίκαιον ὅ τι ἔστι, μὴ μόνον

Appendix, No. 8.

General Class Examination.

ἐρώτα μηδὲ φιλοτιμοῦ ἐλέγχων, ἐπειδάν τίς τι ἀποκρίνηται,—ἐγνωκὼς τοῦτο, ὅτι ῥᾷον ἐρωτᾶν ἢ ἀποκρίνεσθαι,—ἀλλὰ καὶ αὐτὸς ἀπόκριναι καὶ εἰπὲ τί φῄς εἶναι τὸ δίκαιον. καὶ ὅπως[1] μοι μὴ ἐρεῖς,[1] ὅτι τὸ δέον ἐστί, μηδ' ὅτι τὸ ὠφέλιμον, μηδ' ὅτι τὸ λυσιτελοῦν, μηδ' ὅτι τὸ κερδαλέον, μηδ' ὅτι το ξυμφέρον· ἀλλὰ σαφῶς μοι καὶ ἀκριβῶς λέγε ὅ τι ἂν λέγῃς· ὡς ἐγὼ οὐκ ἀποδέξομαι, ἐὰν ὕθλους τοιούτους λέγῃς." καὶ ἐγὼ ἀκούσας ἐξεπλάγην καὶ προσβλέπων αὐτὸν ἐφοβούμην, καί μοι δοκῶ, εἰ μὴ πρότερος ἑωράκη[1] αὐτὸν ἢ ἐκεῖνος ἐμέ, ἄφωνος[1] ἂν[1] γενέσθαι.[1] νῦν δέ, ἡνίκα ὑπὸ τοῦ λόγου ἤρχετο ἐξαγριαίνεσθαι, προσέβλεψα αὐτὸν πρότερος· ὥστε αὐτῷ οἷός τ' ἐγενόμην ἀποκρίνασθαι, καὶ εἶπον ὑποτρέμων· "ὦ Θρασύμαχε, μὴ χαλεπὸς ἡμῖν ἴσθι·[1] εἰ γάρ τι ἐξαμαρτάνομεν ἐν τῇ τῶν λόγων σκέψει ἐγώ τε καὶ ὅδε, εὖ ἴσθι,[1] ὅτι ἄκοντες ἁμαρτάνομεν. μὴ γὰρ δὴ οἴου, εἰ μὲν χρυσίον ἐζητοῦμεν, οὐκ ἄν ποτε ἡμᾶς ἑκόντας[1] εἶναι[1] ὑποκατακλίνεσθαι ἀλλήλοις ἐν τῇ ζητήσει καὶ διαφθείρειν τὴν εὕρεσιν αὐτοῦ, δικαιοσύνην δὲ ζητοῦντας—πρᾶγμα πολλῶν χρυσίων τιμιώτερον,—ἔπειθ'[1] οὕτως ἀνοήτως ὑπείκειν ἀλλήλοις καὶ οὐ σπουδάζειν ὅ τι μάλιστα φανῆναι αὐτό."

2. "ταῦτα δή σοι," ἔφη, "ὦ Σώκρατες, εἱστιάσθω[1] ἐν τοῖς Βενδιδείοις." "ὑπὸ σοῦ γε," ἦν δ' ἐγώ, "ὦ Θρασύμαχε, ἐπειδή γέ μοι πρᾶος ἐγένου καὶ χαλεπαίνων ἐπαύσω. οὐ μέντοι ἱκανῶς γε εἱστίαμαι—δι' ἐμαυτόν, οὐ διὰ δέ· ἀλλ', ὥσπερ οἱ λίχνοι τοῦ ἀεὶ παραφερομένου ἀπογεύονται ἁρπάζοντες, πρὶν τοῦ προτέρου μετρίως ἀπολαῦσαι, καὶ ἐγώ μοι δοκῶ οὕτω, πρὶν ὃ τὸ πρῶτον ἐσκοποῦμεν εὑρεῖν, τὸ δίκαιον ὅ τί ποτ' ἔστιν, ἀφέμενος ἐκείνου ὁρμῆσαι ἐπὶ τὸ σκέψασθαι περὶ αὐτοῦ, εἴτε κακία ἐστὶ και ἀμαθία εἴτε σοφία καὶ ἀρετή· καί, ἐμπεσόντος αὖ ὕστερον λόγου, ὅτι λυσιτελέστερον ἡ ἀδικία τῆς δικαιοσύνης, οὐκ ἀπεσχόμην[1] τὸ[1] μὴ[1] οὐκ[1] ἐπὶ τοῦτο ἐλθεῖν[1] ἀπ' ἐκείνου, ὥστε μοι νυνὶ γέγονεν ἐκ τοῦ διαλόγου μηδὲν[1] εἰδέναι· ὁπότε γὰρ τὸ δίκαιον μὴ[1] οἶδα ὅ[1] ἐστι,[1] σχολῇ[1] εἴσομαι εἴτε ἀρετή τις οὖσα τυγχάνει εἴτε καὶ οὔ, καὶ πότερον ὁ ἔχων αὐτὸ οὐκ εὐδαίμων ἐστὶν ἢ εὐδαίμων."

II.—1. Comment upon such vocables, phrases, and constructions as seem noteworthy, including those to which the figure (1) is annexed above.

2. Notice the time, place, and occasion of the Dialogue *on the Commonwealth*; also the interlocutors and the subjects taken up in the first Book.

LATIN.—*Examiner, Professor Nesbitt.*

FIRST YEAR STUDENTS.

Translate :—

1. Inferimus bellum infestisque signis descendimus in Italiam, tanto audacius fortiusque pugnaturi quam hostis, quanto maior spes, maior est animus inferentis vim quam arcentis. accendit praeterea et stimulat animos dolor iniuria indignitas. ad supplicium depoposcerunt me ducem primum, deinde vos omnes qui Saguntum oppugnassetis; deditos ultimis cruciatibus adfecturi fuerunt. crudelissima ac superbissima gens sua omnia suique arbitrii facit. cum quibus bellum, cum quibus pacem habe-

Appendix, No. 8.

General Class Examination.

amus, se modum imponere aequum censet. circumscribit includitque nos terminis montium fluminumque, quos non excedamus; neque eos quos statuit terminos observat. ne transieris Hiberum, ne quid rei tibi sit cum Saguntinis! ad Hiberum est Saguntum; nusquam te vestigio moveris! parum est quod veterrimas provincias meas Siciliam ac Sardiniam adimis? etiam Hispanias? et inde cessero; in Africam transcendes. transcendes autem dico? duos consules huius anni, unum in Africam alterum in Hispaniam miserunt. nihil umquam nobis relictum est nisi quod armis vindicaremus. illis timidis et ignavis esse licet, qui respectum habent, quos sua terra, suus ager per tuta ac pacata itinera fugientes accipient: vobis necesse est fortibus viris esse, et omnibus inter victoriam mortemve certa desperatione abruptis aut vincere aut, si fortuna dubitabit, in proelio potius quam in fuga mortem oppetere.

(*a*) Give the principal tenses of *depoposcerunt*; *deditos*; *adfecturi*; *includit*; *relictum*. (*b*) Give the exact force of *transieris*, *cessero*, *vindicaremus*. (*c*) State the two meanings of *indignitas*, and give examples of words which are similarly equivocal. (*d*) Write a note on the words *ad Hiberum est Saguntum.*

Ac ne longum sit, Quirites, tabellas proferri iussimus, quae a quoque dicebantur datae. Primum ostendimus Cethego signum: cognovit. Nos linum incidimus: legimus. Erat scriptum ipsius manu Allobrogum senatui et populo, sese quae eorum legatis confirmasset facturum esse: orare ut item illi facerent quae sibi eorum legati recepissent. Tum Cethegus, qui paullo ante aliquid tamen de gladiis ac sicis, quae apud ipsum erant deprehensa, respondisset dixissetque se semper bonorum ferramentorum studiosum fuisse, recitatis litteris debilitatus atque abiectus conscientia repente conticuit.

Change the indirect into the direct construction.

Translate into Latin :—

FOR PASS.

He could not keep his course, and having been drifted too far by the tide, he beheld Britain left on the left hand. Then again, following the change of the tide, he rowed vigorously and reached that part of the island, where had landed in the previous summer.

At that time, though the Gauls were victorious, though the whole city had been taken, yet we held, we inhabited the capitol and the citadel: now, when the Romans are victorious, when the city has been recovered, shall the citadel also and the capitol be abandoned?

FOR HONORS.

The third qualification of an Epic poem is its greatness. The anger of Achilles was of such consequence that it embroiled the Kings of Greece, destroyed the heroes of Troy, and engaged all the gods in factions. Æneas's settlement in Italy produced the Cesars, and gave birth to the Roman empire. Milton's subject was still greater than the former; it does not determine the fate of single persons or nations but of a whole species. The united powers of hell are joined together for the destruction of mankind, which they effected in part and would have completed, had not omnipotence itself interpósed. The principal actors are man in his greatest perfection, and woman in her highest beauty. Their enemies are the fallen angels; the Messiah their friend; and the Almighty their protector.

HONOR EXAMINATION.

Translate, adding brief notes when you deem it necessary:—

1. Discrucior animi: hocine de inprouiso mihi mali obici
Tantum, ut neque quid de me faciam nec quid agam certum siet!
Membra metu debilia sunt: animus timore
Obstipuit: pectore nil sistere consili quit.
Vah, quo modo hac me expediam turba? tanta nunc
Suspitio de me incidit:
Neque ea inmerito: Sostrata
Credit mihi me psaltriam hanc emisse: id anus mi indicium fecit.
Nam ut hinc forte ea ad obstetricem erat missa, ubi eam uidi, ilico
Accedo: rogito, Pamphila quid agat, iam partus adsiet,
Eone obstetricem arcessat, illa exclamat 'abi, abi: iam, Aeschine,
Satis diu dedisti uerba: sat adhuc tua nos frustratast fides.'
"Hem, quid istuc obsecro" inquam "est?" 'ualeas, habeas illam quae
placet.'
Sensi ilico id illas suspicari: sed reprendi me tamen,
Ne quid de fratre garrulae illi dicerem ac fieret palam.
Nunc quid faciam? dicam fratris esse hanc? quod minumest opus
Vsquam ecferri: ac mitto fieri potis est ut nequa exeat.
Ipsum id metuo ut credant: tot concurrunt ueri similia:
Egomet rapui: ipse egomet solui argentum: ad me abductast domum.
Haec adeo mea culpa fateor fieri. non me hanc rem patri,
Vt ut erat gesta, indicasso! exorassem ut eam ducerem.

2. Quod modo proposui, non est sententia; verum
Credite me vobis folium recitare Sibyllae.
Si tibi sancta cohors comitum, si nemo tribunal
Vendit Acersecomes, si nullum in coniuge crimen,
Nec per conventus et cuncta per oppida curvis
Unguibus ire parat nummos raptura Celaeno:
Tunc licet a Pico numeres genus, altaque si te
Nomina delectant, omnem Titanida pugnam
Inter maiores ipsumque Promethea ponas:
De quocumque voles proavum tibi sumito libro.
Quod si praecipitem rapit ambitus atque libido,
Si frangis virgas sociorum in sanguine, si te
Delectant hebetes lasso lictore secures:
Incipit ipsorum contra te stare parentum
Nobilitas claramque facem praeferre pudendis.

Translate in Latin Hexameters:—

Fair blows the wind, the vessel drives along,
Her streamers fluttering at their length, her sails
All full,—She drives along, and round her prow
Scatters the ocean spray. What feelings then
Filled every bosom, when the mariners,
After the peril of that weary way,
Beheld their own dear country! Here stands one
Stretching his sight toward the distant shore,
And as to well-known forms his busy joy
Shapes the dim outline, eagerly he points
The fancied headland and the cape and bay,
Till his eyes ache o'erstraining. This man shakes
His comrade's hand, and bids him welcome home,
And blesses God, and then he weeps aloud.

SECOND YEAR STUDENTS.

I.—Translate :—

1. Verum hic impransi mecum disquirite. Cur hoc ?
Dicam, si potero. Male verum examinat omnis
Corruptus iudex. Leporem sectatus equove
Lassus ab indomito, vel, si Romana fatigat
Militia adsuetum graecari, seu pila velox
Molliter austerum studio fallente laborem
Seu te discus agit, pete cedentem aëra disco :
Cum labor extuderit fastidia ; siccus, inanis
Sperne cibum vilem, nisi Hymettia mella Falerno
Ne biberis diluta. Foris est promus, et atrum
Defendens pisces hiemat mare : cum sale panis
Latrantem stomachum bene leniet. Unde putas aut
Qui partum ! Non in caro nidore voluptas
Summa, sed in te ipso est.

(*a*) Derive *impransi ; examinat ; fatigat ; promus.*

(*b*) Give the principal tenses of *corrupto, domito, extuderit sperne, disquirite.*

2. Hunc ego, non alio dictum prius ore, Latinus
Vulgavi fidicen ; iuvat immemorata ferentem
Ingenuis oculisque legi manibusque teneri.
Scire velis, mea cur ingratus opuscula lector
Laudet ametque domi, premat extra limen iniquus
Non ego ventosae plebis suffragia venor
Impensis coenarum et tritae munere vestis ;
Non ego, nobilium scriptorum auditor et ultor,
Grammaticas ambire tribus et pulpita dignor :
Hinc illae lacrimae. “ Spissis indigna theatris
Scripta pudet recitare et nugis addere pondus,”
Si dixi ; “ Rides,” ait, “ et Jovis auribus ista
Servas : fidis enim, manare poëtica mella
Te solum, tibi pulcher.” Ad haec ego naribus uti
Formido et, luctantis acuto ne secer ungui,
“ Displicet iste locus,” clamo, et diludia posco.
Ludus enim genuit trepidum certamen et iram,
Ira truces inimicitias et funebre bellum.

(*a*) What species of verse is referred to in the first line? Account for the difference in quantity between the middle syllable of *tibicen* and that of *fidicen.*

(*b*) Illustrate from Juvenal the expression *auditor et ultor.*

(*c*) Explain accurately the expressions—*Grammaticas ambire tribus,* and *diludia posco.*

Translate into Latin prose the following passage, employing the *oratio obliqua* :—

Although he sent letters to the Senate, proposing that all the armies should be disbanded, he had not even gained this point : levies were being held throughout Italy ; two legions which had been withdrawn from him, on pretence of a war with Parthia, were kept at home ; the commonwealth was in arms. Whither did all this tend, but to his own destruction? Nevertheless he was prepared to make every concession and to suffer everything for his country's sake. Let Pompey depart to

Appendix. No. 8.

General Class Examination.

his own provinces; let all in Italy lay down their arms; let the elections and the whole commonwealth be resigned uncontrolled to the Senate and people of Rome.

N.B.—The preceding extract is not to be translated by Candidates for Honors.

ADDITIONAL FOR HONORS.

Translate:—

> Scribendi recte sapere est et principium et fons:
> Rem tibi Socraticae poterunt ostendere chartae,
> Verbaque provisam rem non non invita sequentur.
> Qui didicit, patriae quid debeat et quid amicis,
> Quo sit amore parens, quo frater amandus et hospes,
> Quod sit conscripti, quod iudicis officium, quae
> Partes in bellum missi ducis: ille profecto
> Reddere personae scit convenientia cuique.
> Respicere exemplar vitae morumque iubebo
> Doctum imitatorem, et vivas hinc ducere voces.
> Interdum speciosa locis morataque recte
> Fabula, nullius veneris, sine pondere et arte,
> Valdius oblectat populum meliusque moratur,
> Quam versus inopes rerum nugaeque canorae.

Write brief notes on the expressions: *Socraticae chartae; doctum imitatorem; conscripti; speciosa locis morataque recte.*

Translate into Latin lyric verse:—

> Now the bright Morning Star, day's harbinger,
> Comes dancing from the east, and leads with her
> The flow'ry May, who from her green lap throws
> The yellow cowslip, and the pale primrose.
> Hail, bounteous May! that dost inspire
> Mirth, and youth, and warm desire:
> Woods and groves are of thy dressing;
> Hill and dale doth boast thy blessing.
> Thus we salute thee with our early song,
> And welcome thee, and wish thee long.

HONOR EXAMINATION.

1. Translate, adding brief notes when you deem it necessary:—

Et quoniam magna vis orationis est eaque duplex, altera contentionis, altera sermonis, contentio disceptationibus tribuatur iudiciorum, contionum, senatus, sermo in circulis, disputationibus, congressionibus familiarium versetur, sequatur etiam convivia. Contentionis praecepta rhetorum sunt, nulla sermonis, quamquam haud scio an possint haec quoque esse. Sed discentium studiis inveniuntur magistri, huic autem qui studeant sunt nulli, rhetorum turba referta omnia. Quamquam quae verborum sententiarumque praecepta sunt, eadem ad sermonem pertinebunt. Sed quum orationis iudicem vocem habeamus, in voce autem duo sequamur, ut clara sit, ut suavis, utrumque omnino a natura petendum est, verum alterum exercitatio augebit, alterum imitatio presse loquentium et leniter. Nihil fuit in Catulis, ut eos exquisito iudicio putares uti litterarum, quamquam erant litterati, sed et alii, hi autem optime uti lingua Latina putabantur. Sonus erat dulcis, litterae neque expressae, neque oppressae, ne aut obscurum esset

Appendix, No. 8.

General Class Examination.

aut putidum, sine contentione vox nec languens nec canora. Uberior oratio L. Crassi nec minus faceta, sed bene loquendi de Catulis opinio non minor. Sale vero et facetiis Caesar, Catuli patris frater, vicit omnes, ut in illo ipso forensi genere dicendi contentiones aliorum sermone vinceret. In omnibus igitur his elaborandum est, si in omni re quid deceat exquirimus. Sit ergo hic sermo, in quo Socratici maxime excellunt, lenis minimeque pertinax, insit in eo lepos. Nec vero, tamquam in possessionem suam venerit, excludat alios, sed quum reliquis in rebus tum in sermone communi vicissitudinem non iniquam putet.

2. Translate into Latin prose :—

I can stifle any violent inclination, and appease a torrent of anger, or the solicitations of revenge with success. Indolence is a stream which flows slowly on, but yet undermines the foundation of every virtue. A vice of a more lively nature were a more desirable tyrant than this rust of the mind which gives a tincture of its nature to every one's life. It were as little hazard to be lost in a storm as to lie perpetually thus becalmed; and it is to no purpose to have within one the seeds of a thousand good qualities if we want the vigour and resolution necessary for the exerting them. Death brings all persons back to an equality; and this image of it, this slumber of the mind, leaves no difference between the greatest genius and the meanest understanding. A faculty of doing things remarkably praiseworthy, thus concealed, is no more use to the owner than a heap of gold to the man who dares not use it.

THIRD AND FOURTH YEAR STUDENTS.

Translate :—

I. Etenim quum illi in dicendo inciderint loci, quod persaepe evenit, ut de dis immortalibus, de pietate, de concordia, de amicitia, de communi gentium iure, de aequitate, de temperantia, de magnitudine animi, de omni virtutis genere sit dicendum, clamabunt, credo, omnia gymnasia atque omnes philosophorum scholae sua esse haec omnia propria, nihil omnino ad oratorem pertinere. Quibus ego, ut de his rebus in angulis consumendi otii causa disserant, quum concessero, illud tamen oratori tribuam et dabo, ut eadem, de quibus illi tenui quodam exsanguique sermone disputant, hic cum omni gravitate et iucunditate explicet. Haec ego cum ipsis philosophis tum Athenis disserebam. Cogebat enim me M. Marcellus hic noster, qui nunc aedilis curulis est et profecto, nisi ludos nunc faceret, huic nostro sermoni interesset ; ac iam tum erat adolescentulus his studiis mirifice deditus. Iam vero de legibus instituendis, de bello, de pace, de sociis, de vectigalibus, de iure civium generatim in ordines aetatesque descripto dicant vel Graeci, si volunt, Lycurgum aut Solonem—quamquam illos quidem censemus in numero eloquentium reponendos—scisse melius, quam Hyperidem aut Demosthenem, perfectos iam homines in dicendo et perpolitos, vel nostri decemviros, qui XII tabulas prescripserunt, quos necesse est fuisse prudentes, anteponant in hoc genere et Ser. Galbae et socero tuo C. Laelio, quos constat dicendi gloria praestitisse. Numquam enim negabo esse quasdam artes proprias eorum, qui in his cognoscendis atque tractandis studium suum omne posuerunt; sed oratorem plenum atque perfectum esse eum, qui de omnibus rebus possit copiose varieque dicere.

Write brief notes on *loci*; *de communi gentium jure; de legibus*; *de jure civium generatim in ordines aetatesque descripto.*

Appendix, No. 8.

General Class Examination.

2. Sin id aut non erit aut erit obscurius, sicut medico diligenti, priusquam conetur aegro adhibere medicinam, non solum morbus eius, cui mederi volet, sed etiam consuetudo valentis et natura corporis cognoscenda est: sic equidem quum aggredior in ancipiti causa et gravi ad animos iudicum pertractandos, omni mente in ea cogitatione curaque versor, ut odorer, quam sagacissime possim, quid sentiant, quid existiment, quid exspectent, quid velint, quo deduci oratione facillime posse videantur. Si se dant et, ut ante dixi, sua sponte, quo impellimus, inclinant atque propendent, accipio quod datur et ad id, unde aliquis flatus ostenditur, vela do. Sin est integer quietusque iudex, plus est operis. Sunt enim omnia dicendo excitanda, nihil adiuvante natura. Sed tantam vim habet illa, quae recte a bono poëta dicta est *flexanima atque omnium regina rerum* oratio, ut non modo inclinantem excipere aut stantem inclinare, sed etiam adversantem et repugnantem ut imperator bonus ac fortis capere possit.

Quote the original of "*flexanima atque omnium*," etc.

1. Mention the principal sources, describe the form, and give a brief account of the subject matter, of the three books of the treatise "de Oratore."

2. Mention the time and the place in which the dialogue is laid, and give some account of the interlocutors.

Translate into Latin Hexameter verse :—

The lapse of time and rivers is the same,
Both speed their journey with a restless stream;
The silent pace with which they steal away,
No wealth can bribe, no prayers persuade to stay.
Alike irrevocable both when past,
And a wide ocean swallows both at last.
Though each resemble each in every part,
A difference strikes at length the musing heart;
Streams never flow in vain; where streams abound
How laughs the land with various plenty crown'd!
But time which should enrich the nobler mind,
Neglected leaves a weary waste behind.

Translate, adding brief notes where you deem it requisite :—

1. Galbae corpus, diu neglectum et plurimis ludibriis vexatum, licentia tenebrarum dispensator Argius e primoribus servis humili sepultura in privatis eius hortis contexit. caput per lixas calonesque suffixum laceratumque ante Patrobii tumulum (libertus is Neronis punitus a Galba fuerat) postero demum die repertum et cremato iam corpori admixtum est. hunc exitum habuit Servius Galba, tribus et septuaginta annis quinque principes prospera fortuna emensus et alieno imperio felicior quam suo. vetus in familia nobilitas, magnae opes: ipsi medium ingenium, magis extra vitia quam cum virtutibus. famae nec incuriosus nec venditator; pecuniae alienae non adpetens, suae parcus, publicae avarus, amicorum libertorumque, ubi in bonos incidisset, sine reprehensione patiens, si mali forent, usque ad culpam ignarus. sed claritas natalium et metus temporum obtentui, ut quod segnitia erat, sapientia vocaretur. dum vigebat aetas, militari laude apud Germanias floruit. pro consule Africam moderate, iam senior citeriorem Hispaniam pari iustitia continuit, maior privato visus, dum privatus fuit, et omnium consensu capax imperii, nisi imperasset.

2. exactioni triginta equites Romani praepositi, novum officii genus et ambitu ac numero onerosum: ubique hasta et sector, et inquieta urbs

Appendix; No. 8.

General Class Examination.

actionibus. ac tamen grande gaudium, quod tam pauperes forent quibus donasset Nero quam quibus abstulisset. exauctorati per eos dies tribuni, e praetoria Antonius Taurus et Antonius Naso, ex urbanis cohortibus Aemilius Pacensis, e vigiliis Iulius Fronto. nec remedium in ceteros fuit, sed metus initium, tamquam per artem et formidinem, singuli pellerentur, omnibus suspectis.

3. Igitur laudata militum alacritate Vitellius ministeria principatus per libertos agi solita in equites Romanos disponit; vacationes centurionibus ex fisco numerat; saevitiam militum plerosque ad poenam exposcentium saepius adprobat, raro simulatione vinculorum frustratur.

Translate into Latin prose :—

The poor and ignorant Arab, whether of the desert or town, moulds with clay the jars for his daily wants, in a form which may be traced in the most elegant vases of Greece and Rome; and, what is no less remarkable, identical with that represented on monuments raised by his ancestors three thousand years before. If he speaks, he shows a ready eloquence; his words are glowing and apposite; his descriptions true, yet brilliant; his similies just, yet most fanciful. These high qualities seem to be innate in him; he takes no pains to cultivate or improves them; he knows nothing of reducing them to any rule, or measuring them by any standard. As it is with him, so it has been from time unknown with those before him; there has been little change, no progress.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FIRST YEAR STUDENTS.

I.—Translate into Italian :—

1. He is rather learned than witty. The mother seems younger than the daughter. Francis the first. Charles the fifth. Petrarch flourished towards the end of the fourteenth century. Where is your wife? There she is. I will introduce you to her

2. The next morning I went to the window to see Molchiorre, but I had no more conversation with the robbers. I returned their salutation and said that I had been forbidden to speak. The actuary, who had cross-examined me, came to announce to me with great mystery a visit which, he said, would cause me great pleasure. When it seemed to him that he had sufficiently prepared me, he said :—In short, your father is coming.

II.—Translate into English :—

Al cadere d'una bella giornata d'aprile dell' anno 1503 la campana di San Domenico in Barletta sonava gli ultimi tocchi dell' avemaria. Sulla piazza vicina in riva al mare, luogo di ritrovo degli abitanti tranquilli che, nelle, terricciuole dei climi meridionali specialmente, sogliono sulla sera essere insieme a barattar parole al sereno per riposarsi dalle faccende del giorno, stavano col fine medesimo dispersi in varj gruppi molti soldati spagnuoli ed italiani, alcuni passeggiando, altri fermi, o seduti, od appoggiati alle barche tirate a secco, delle quali era ingombra la spiaggia; e, com' è costume delle soldatesche d' ogni età e d' ogni nazione, il loro contegno era tale che pareva dire: il mondo è nostro. Di fatto, lasciato loro il campo migliore, ei tenevano i terrazzani in disparte, dando così a questa loro burbanza tacita approvazione. Chi per figurarsi questo quadro si volesse rappresentare una simile radunata de' nostri soldati moderni

Appendix, No. 8.

General Class Examination.

nella loro misera *uniforme*, sarebbe lontano assai dall' averne una giusta immagine. L'esercito di Consalvo, le fanterie specialmente, quantunque le meglio in arnese, e le migliori di tutta cristianità, non conoscevano però, più di qualunque altra milizia del secolo XVI, la stretta disciplina moderna, che è giunta a render simili un soldato all' altro dalle scarpe al cappello. Qui invece, ogni uomo che facesse il mestier dell' arme a piede o a cavallo, poteva vestirsi, armarsi ed adornarsi come più gli piacesse; onde nasceva fra questa turba una mirabile varietà e vaghezza nelle fogge, ne' colori e nel portamento, dal quale si poteva facilmente conoscere a qual nazione appartenesse ogni individuo.—MASSIMO D'AZEGLIO.

III.—IL SABATO DEL VILLAGGIO.

La donzelletta vien dalla campagne,
In sul calar del sole,
Col suo fascio dell' erba; e reca in mano
Un mazzolin di rose e di viole,
Onde, siccome suole,
Ornare ella si appresta
Dimani, al dì di festa, il petto e il crine.
Siede con le vicine
Su la scala a filar la vecchierella,
Incontro là dove si perde il giorno;
E novellando vien del suo buon tempo,
Quando ai dì della festa ella si ornava,
Ed ancor sana e snella
Solea danzar la sera intra di quei
Ch' ebbe compagni dell' età più bella.
Già tutta l' aria imbruna,
Torna azzurro il sereno, e tornan l' ombre
Giù da' colli e da' tetti,
Al biancheggiar della recente luna.
Or la squilla dà segno
Della festa che viene;
Ed a quel suon diresti
Che il cor si riconforta.
I fanciulli gridando
Su la piazzuola in frotta,
E qua e là saltando,
Fanno un lieto romore:
E intanto riede alla sua parca mensa,
Fischiando, il zappatore,
E seco pensa al dì del suo riposo.

LEOPARDI.

I.—Translate into French:—

1. Where are you going to dine to-day? I am going to dine at my uncle's. Have you seen the physician? No, but I have seen the lawyer. Have the English lost as many men as the French? They have not lost as many. Is Henry taller than John? He is the tallest of all his brothers. Is he an Englishman? No, he is an Irishman. Am I right or wrong? I cannot tell. What is the size of this table? It is ten feet long and five feet broad. How high is this tower? It is one hundred and forty-three feet high.

2. Napoleon passing on horseback a company of grenadiers, saw one of very small stature, and said to him: "You are very short for a grenadier." The soldier replied: "If generals were chosen by the height, you would not be one of them."

Appendix, No. 8.

General Class Examination.

II.—Translate into English :—

L'ESPAGNOL ET L'INDIEN.

Un Espagnol avait rencontré un Indien au milieu d'un désert. Ils voyageaient tous deux à cheval ; l'Espagnol qui craignait que son cheval ne pût faire sa route, parce qu'il était très mauvais, demanda à l'Indien qui en avait un jeune et vigoureux, de faire un échange ; celui-ci refusa, comme de raison. L'Espagnol lui cherche querelle ; ils en viennent aux mains ; mais l'Espagnol bien armé, se saisit facilement du cheval qu'il désirait, et continue sa route. L'Indien le suit jusque dans la ville la plus prochaine, et va porter ses plaintes au juge. L'Espagnol est obligé de comparaître et d'amener le cheval ; il traite l'Indien de fourbe, assurant que le cheval lui appartient et qu'il l'a élevé tout jeune. Il n'y avait point de preuves du contraire, et le juge indécis allait renvoyer les plaideurs hors de cour et de procès, lorsque l'Indien s'écria : "Le cheval est à moi, et je le prouve." Il ôte aussitôt son manteau, en couvre subitement la tête de l'animal, et s'adressant au juge : "Puisque cet homme," dit-il "assure avoir élevé ce cheval, commandez-lui de dire de quel œil il est borgne." L'Espagnol ne veut point paraître hésiter, et répond à l'instant : "Il est borgne de l'œil droit."—Alors l'Indien découvrant la tête du cheval, dit : "Il n'est borgne ni de l'œil droit ni de l'œil gauche." —Le juge, convaincu par une preuve si ingénieuse et si forte, adjugea le cheval à l'Indien, et l'affaire fut terminée.

LE CORBEAU ET LE RENARD.

Maître Corbeau, sur un arbre perché,
  Tenait en son bec un fromage ;
Maître Renard, par l'odeur alléché,
  Lui tint à peu près ce langage :
"Hé ! bonjour, monsieur du Corbeau !
Que vous êtes joli ! que vous me semblez beau !
  Sans mentir, si votre ramage
  Se rapporte à votre plumage,
Vous êtes le phénix des hôtes de ces bois."
A ces mots, le corbeau ne se sent pas de joie ;
  Et pour montrer sa belle voix,
Il ouvre un large bec, laisse tomber sa proie.
Le renard s'en saisit, et dit : "Mon bon monsieur,
  Apprenez que tout flatteur
Vit aux dépens de celui qui l'écoute :
Cette leçon vaut bien un fromage, sans doute."
  Le corbeau, honteux et confus,
Jura, mais un peu tard, qu'on ne l'y prendrait plus.

III.—(*a*) Give the third pers. plural of the conditional of the following verbs :—*aller, mener, sentir, boire, battre, voir.*
(*b*) Give the third pers. sing. of the preterite of the same verbs.
(*c*) Give the first pers. sing. of the present of the same verbs.

I.—Translate into German :—

He is acquainted with everybody. Have you lost anything? The boys came from school. He has been educated partly in France, partly in Germany. Wait, till I have finished my work. I shall take an umbrella, for it is going to rain. What would he say if you asked him? The pupil has been praised by the teacher. We rise early. Have you delivered the letter? The sun was just rising as we set out. We have translated a page. Ferry me over.

Appendix, No. 8.

General Class Examination.

II.—Translate into English :—

Es war einmal ein König, der war krank, und es glaubte Niemand, daß er mit dem Leben davon käme. Er hatte aber drei Söhne, die waren darüber betrübt, gingen hinunter in den Schloßgarten und weinten; da begegnete ihnen ein alter Mann, der fragte ſie nach ihrem Kummer. Sie erzählten ihm, ihr Vater wäre ſo krank, daß er wohl ſterben würde, denn es wollte ihm nichts helfen. Da ſprach der Alte: „Ich weiß noch ein Mittel, das iſt das Waſſer des Lebens; wenn er davon trinkt, ſo wird er wieder geſund; es iſt aber ſchwer zu finden.“ Da ſagte der älteſte Sohn: „Ich will es ſchon finden,“ ging zum kranken Könige und hat ihn, er möchte ihm erlauben auszuziehen, um das Waſſer des Lebens zu ſuchen, das ihn allein heilen könnte.

III.—Munter fördert ſeine Schritte
Fern im wilden Forſt der Wandrer
Nach der lieben Heimathhütte.
Blökend ziehen heim die Schafe,
Und der Rinder
Breitgeſtirnte, glatte Schaaren
Kommen brüllend,
Die gewohnten Stalle füllend.
Schwer herein
Schwankt der Wagen,
Kornbeladen;
Bunt von Farben,
Auf den Garben
Liegt der Kranz,
Und das junge Volk der Schnitter
Fliegt zum Tanz.
Markt und Straße werden ſtiller;
Um des Lichts geſell'ge Flamme
Sammeln ſich die Hausbewohner,
Und das Stadtthor ſchließt ſich knarrend.
Schwarz bedecket
Sich die Erde;
Doch den ſichern Bürger ſchrecket
Nicht die Nacht,
Die den Böſen gräßlich wecket;
Denn das Auge des Geſetzes wacht.

Heil'ge Ordnung, ſegenreiche
Himmelstochter, die das Gleiche
Frei und leicht und freudig bindet,
Die der Städte Bau gegründet,
Die herein von den Gefilden
Rief den ungeſell'gen Wilden,
Eintrat in der Menſchen Hütten,
Sie gewöhnt zu ſanften Sitten
Und das theuerſte der Bande
Wob, den Trieb zum Vaterlande!

IV.—(*a*) Give the infinitive, imperfect, and past participle of: to hold, to love, to hit, to shoot, to do, to run.

(*b*) Give the double plurals of: Bank, Band, Licht, Zoll, with their respective meanings.

(*c*) Decline: Der grüne Wald.

Appendix, No. 8.

General Class Examination.

SECOND YEAR STUDENTS.

I.—Translate into French:—

While these things were passing in Holland, James II. had at last become sensible of his danger. Intelligence, which could not be disregarded, came pouring in from various quarters. At length a despatch from Albeville removed all doubts. It is said that, when the King had read it, the blood left his cheeks, and he remained some time speechless. He might, indeed, well be appalled. The first easterly wind would bring a hostile armament to the shores of his realm. All Europe, one single power alone excepted, was impatiently waiting for the news of his downfall. The help of that single power he had madly rejected.

II.—Translate into English:—

On a remarqué depuis longtemps que le développement littéraire des nations dépend étroitement de leur état social et des phases successives de leur civilisation. Il faut maintenant ajouter une dépendance de plus, celle qui appartient à la langue, celle que l'outil a nécessairement sur l'œuvre produite. De quelque façon que l'on se représente la cause des phases littéraires, il ne sera indifférent ni à leur caractère, ni à leur évolution que la langue ait été dans tel ou tel état, embryonaire ou développée, en un moment de crise ou fixée. Une analyse attentive vérifiera ces connexions dans le long parcours des huit ou neuf siècles de production qui font l'historie de notre langue. On peut en résumer ainsi les points principaux: L'origine, comme celles des autres langues romanes, en est cachée au sein des premiers siècles qui suivent l'invasion et l'établissement des barbares sur le territoire romain. La latinité, telle qu'on la voit à la fin de l'empire, marchait manifestement vers un changement profond; l'immixtion germanique rendit cette rénovation moins régulière qu'elle n'eût été; mais moins de régularité ne change rien au fond; et, quand méme la dissolution de l'empire eûe été latine, non barbare, faite per les gens du sol, non par les étrangers, des langues novo-latines ne s'en fussent pas moins produites. Cela montre la connexion entre l'idiome qui s'éteignait et les idiomes qui naissaient et lie l'histoire des langues nouvelles à l'histoire de la langue ancienne.—LITTRE.

III.

Pas une feuille qui bouge,
Pas un seul oiseau chantant,
Au bord de l'horizon rouge
Un éclair intermittent;

D'un côté rares brousailles,
Sillons à demi noyée,
Pans grisâtres de murailles,
Saules noueux et ployée;

De l'autre, un champ que termine
Un large fossé plein d'eau,
Une vieille qui chemine
Avec un pesant fardeau;

Et puis la route qui plonge
Dans le flanc des coteaux bleus,
Et comme un ruban s'allonge
En minces plis onduleux.

GAUTIER.

Appendix No. 8.
General Class Examination.

IV.—(*a*) Mention the principle works of Boileau, and state what were his classical models for each.

(*b*) Write a short notice of Corneille.

(*c*) Write an analysis, in French, of Racine's *Phèdre.*

I. Translate into German :—

With all his virtues he did not escape calumnies. For the sake of his friend he would have risked everything. Let us take a drive. I should rather have a walk. My friend has been elected president of the society. The duke's summer-palace, surrounded by a beautiful park, lies on the bank of the river. Romulus and Remus were, according to the tradition, the founders of the city of Rome. The sun, rising, as it were, out of the sea, presented a magnificent spectacle. The errors which require to be corrected are marked in red ink. It is not to be expected. There are people who read merely that they may not be obliged to think. There was little dancing, but much singing and playing.

II.—Translate into English :—

v. Tellheim. Mit wem ſprichſt du ſo, Werner? Wir ſind allein: jetzt darf ich es ſagen; wenn uns ein Dritter hörte, ſo wäre es Windbeutelei. Ich bekenne es mit Vergnügen daß ich dir zweimal mein Leben zu danken habe. Aber, Freund, woran fehlte es mir, daß ich bei Gelegenheit nicht eben ſo viel für dich würde gethan haben? He!

Werner. Nur an der Gelegenheit! Wer hat daran gezweifelt, Herr Major? Habe ich Sie nicht hundertmal für den gemeinſten Soldaten, wenn er ins Gedränge gekommen war, Ihr Leben wagen ſehen?

v. Tellheim. Alſo!

Werner. Aber——

a. Tellheim. Warum verſtehſt du mich nicht recht? Ich ſage: es ziemt ſich nicht, daß ich dein Schuldner bin; ich will dein Schuldner nicht ſein. Nämlich in den Umſtänden nicht, in welchen ich mich jetzt befinde.

Werner. So, ſo! Sie wollen es verſparen bis auf beſſere Zeiten; Sie wollen ein andermal Geld von mir borgen, wenn Sie keins brauchen, wenn Sie ſelbſt welches haben, und ich vielleicht keins.

v. Tellheim. Man muß nicht borgen, wenn man nicht wieder zu geben weiß.

Werner. Einem Mann, wie Sie, kann es nicht immer fehlen.

v. Tellheim. Du kennſt die Welt!—Am wenigſten muß man ſodann von Einem borgen, der ſein Geld ſelbſt braucht.

Werner. O ja, ſo Einer bin ich! Wozu braucht' ich's denn?—Wo man einen Wachtmeiſter nöthig hat, gibt man ihm auch zu leben.—Leſſing.

III.—Sanſouci.

Dies iſt der Königspark. Rings Bäume, Blumen, Raſen;
Sieh, wie ins Muſchelhorn die Steintritonen blaſen!
Die Nymphe ſpiegelt klar ſich in des Beckens Schooß;
Sieh hier der Flora Bild in hoher Roſen Mitten,
Die Laubengänge ſieh, ſo regelrecht geſchnitten,
Als wären's Verſe Boileaus.

Vorbei am luft'gen Haus voll fremder Vögelſtimmen
Laß uns den Hang empor zu den Terraſſen klimmen,
Die der Orange Wuchs umkränzt mit falbem Grün;
Dort oben ragt, wo friſch ſich Tann' und Buche miſchen,
Das ſchmucklos heitre Schloß mit breiten Fenſterniſchen,
Darin des Abends Feuer glühn.

Appendix, *No. 8.*

General Class Examination.

Dort lehnt ein Mann im Stuhl. Sein Haupt iſt vorgeſunken,
Sein blaues Auge ſinnt, und oft in hellen Funken
Entzündet ſich's; ſo ſprüht aus dunkler Luft ein Blitz;
Ein dreigeſpitzter Hut bedeckt der Schläfe Weichen,
Sein Krückſtock irrt im Sand und ſchreibt verworrne Zeichen;
Nicht irrſt du—das iſt König Fritz. Geibel.

THIRD YEAR STUDENTS.

I.—Translate into French :—

It would doubtless be unfair to pass a severe censure on the government of Charles I. for transgressions of law which a large course of precedents might render dubious, or at least extenuate. But this common apology for his administration, on which the artful defence of Hume is almost entirely grounded, must be admitted cautiously, and not until we have well considered how far such precedents could be brought to support it. This is particularly applicable to his proclamations, which are far more numerous than those of his father. They imply a prerogative of intermeddling with all matters of trade, prohibiting or putting under restraint the importation of various articles and the home growth of others, or establishing regulations for manufactures. Prices of several minor articles were fixed by proclamation; and in one instance this was extended to poultry, butter, and coals. The king declares, by a proclamation, that he had incorporated all tradesmen and artificers within London and three miles round; so that no person might set up any trade without having served a seven years' apprenticeship, and without admission into such corporation. I know not whether these projects were, in any degree, founded on the alleged pretext of correcting abuses, or were solely designed to raise money by means of these corporations.—HALLAM.

II. (*a*) Give an account of the principal schools of French thought since the Revolution. In doing so, write the life of, at least, one eminent author, in French.

I.—Translate into German :—

The continental kingdoms which had risen on the ruins of the Western Empire kept up some intercourse with those eastern provinces where the ancient civilisation, though slowly fading away under the influence of misgovernment, might still astonish and instruct barbarians, where the court still exhibited the splendour of Diocletian and Constantine, where the public buildings were still adorned with the sculptures of Polycletus and the paintings of Apelles, and where laborious pedants, themselves destitute of taste, sense, and spirit, could still read and interpret the master-pieces of Sophocles, of Demosthenes, and of Plato. From this communion Britain was cut off. Her shores were, to the polished race which dwelt by the Bosporus, objects of a mysterious horror, such as that with which the Ionians of the age of Homer had regarded the Straits of Scylla and the city of the Læstrygonian cannibals. There was one province of our island in which, as Procopius had been told, the ground was covered with serpents, and the air was such that no man could inhale it and live. To this desolate region the spirits of the departed were ferried over from the land of the Franks at midnight. A strange race of fishermen performed the ghastly office. The speech of the dead was distinctly heard by the boatmen; their weight made the keel sink deep in the water; but their forms were invisible to mortal eye.

II.—Translate into English :—

Er zerlegt ſich ganz Syrien nicht nur, von Oſt nach Weſt gerechnet, in drei natürliche Längenzonen, den continentalen, den maritimen Theil und den zwiſchen beiden ſich erhebenden Gebirgszug, ſondern auch von Süden nach Norden hat es ſeine Natureintheilung in drei Hauptquartiere, das ſüdliche, mittlere und nördliche Syrien, durch ſeine plaſtiſchen Verhältniſſe erhalten. Das centrale iſt eben das Bergrevier des Libanon, welches die beiden andern weit überragt und ſcheidet, deren bei weitem niedrigere Bergzüge nicht wie jenes Mitglied denſelben Charakter der Erhabenheit in Anſpruch nehmen können, ſondern nur, inſofern ſie ſich ihm nähern, daran einen entferntern Antheil haben. Ohne dieſe centrale Erhebung würde ganz Syrien dieſelbe Waſſerarmuth, derſelbe Mangel laufender Ströme und dieſelbe Vegetationsleere wie ſeine niedern Perſiſchen, Arabiſchen, Peträſchen Umgebungen getroffen haben; es hätte nicht die Rolle übernehmen können, die es in der Weltgeſchichte zu ſpielen berufen war. Nun konnte Damaskus mit ſeinem Paradieſe, einer der älteſten Kulturgärten, an der Oſtſeite aufblühen.—Ritter.

III.—(*a*) Write a brief account of Schiller, in German.

(*b*) Characterise the German Romantic School, and contrast it with the French Romantic School.

(*c*) Give an account of the oldest document in the German language.

MATHEMATICS.—*Examiner, Professor Purser.*

FIRST YEAR STUDENTS.

ALGEBRA.

1. Given $\begin{cases} \frac{3}{2}x-y=6 \\ \frac{3}{2}y-x=16 \end{cases}$ find x and y.

2. If α and β be the two values of x which satisfy the equation $x^2+px+q=0$, show without calculating the expressions for α and β that $\alpha+\beta=-p$ $\alpha\beta=q$.

3. Solve the equations

$$x-\frac{10}{x}=3.$$

$$\sqrt{x+8}+\sqrt{x-8}=2\sqrt{x-1}.$$

4. Given $\begin{cases} x+y=\frac{15}{x} \\ x-y=\frac{2}{y} \end{cases}$ find x and y.

5. Sum the series 1, 1·03, 1·06, 1·09, to 51 terms.

Show that if a, b, c, d, &c., form a geometric series, $\sqrt{a}+\sqrt{b}$, $\sqrt{b}+\sqrt{c}$ $\sqrt{b}+\sqrt{d}$ do so also.

6. Define the logarithm of a number to the base 10.

Prove that log (3·2754) and log (3275.4) have the same mantissa.

Given that log (19307)=4·28571, find the seventh root of 100 to four places of decimals.

7. Expand $(1+x)^{\frac{2}{3}}$ by the binomial theorem.

Sum the series

$$1+\frac{n}{1}+\frac{n.n-1}{1.2}+\frac{n.n-1.n-2}{1.2.3}+\text{\&c.}$$

$$1+\left(\frac{n}{1}\right)^2+\left(\frac{n.n-1}{1.2}\right)^2+\left(\frac{n.n-1.n-2}{1.2.3}\right)^2+\text{\&c.}$$

when n is an integer.

Appendix No. 8.

General Class Examination.

8. Find when $\frac{x^m}{(x-a)^n}$ is least, x, a, and $x-a$ being all supposed positive, and m being greatsr than n.

The captain of a river steamer finds that the quantity of coal he uses in an hour varies as $v^{\frac{5}{2}}$, where v is the speed of his vessel through the water, find at what rate he should ascend the river (which flows at 6 miles an hour) so as to spend least coal.

9. Prove the series for the expansion of a^x in powers of x.

Find the limiting value of $\frac{x}{x^{\frac{1}{2}}} \cdot \frac{x^{\frac{1}{3}}}{x^{\frac{1}{4}}} \cdot \frac{x^{\frac{1}{5}}}{x^{\frac{1}{6}}}$ &c., as the number of factors increasee indefinitely.

10. Given the equations

$$y\cos\phi - x\sin\phi = a\cos 2\phi$$
$$y\sin\phi + x\cos\phi = 2a\sin 2\phi$$

prove the following relations between x and y

$$(x+y)^{\frac{2}{3}} + (x-y)^{\frac{2}{3}} = 2a^{\frac{2}{3}}.$$

11. Prove that the root of a quadratic equation can always be expressed as a continued fraction.

Express in this form sin 18° and calculate the first four convergents.

12. Eliminate θ from the equations

$$a\cos\theta + b\sin\theta = c$$
$$a'\cos\theta + b'\sin\theta = c'.$$

---

1. The angle at the centre of a circle is donble the angle at the circumference, standing on the same arc.

2. Describe a circle about a given triangle.

3. Define the following terms, *equal ratios*, *similar figures*, two pairs of magnitudes *reciprocal'y proportional.* Prove that the right line bisecting the vertical angle of a triangle divides the base into segments proportional to the sides.

4. Given $\sin\theta = \frac{2}{3}$ calculate $\tan\theta$ and $\cos 2\theta$, each to two places of decimals.

Find sin 30° and tan 135°.

5. Assuming the expression for the cosine of the angle of a triangle in terms of the sides, investigate that for the sine of the angle.

6. Two sides of a triangle ars 81·35 and 63·47 feet, the contained angls 55° 36′, calculate the base angles, given that

$\log(17{\cdot}88) = 1{\cdot}25237$ $\log(144{\cdot}82) = 2{\cdot}16083$
$1{\cdot}\tan 62° 12' = 10{\cdot}27799$ $1.\tan 13° 10' 46'' = 9{\cdot}36953$

7. Show that any of the three diagonals of a complete quadrilateral is cut harmonically by the other two.

8. The vertex of a triangle of given species is fixed; one base angle moves on a given circle, find the locus of the other.

9. A line of given length moves with its extremeties on two fixed lines, find the locus of the intersection of perpendiculars of the triangle so formed.

10. Three chords of a circle intersect in a point show that if 2α, 2β, 2γ, be the angles which these chords subtend at the centre of the circle, and a, b, c, the sides of any triangle parallel to these chords, then one of the three magnitudes $a\cos\alpha$, $b\cos\beta$, $c\cos\gamma$, is equal to the sum of the other two.

Appendix, No. 8.

General Class Examination.

11. Investigate the limits of $\left(\cos\frac{a}{n}\right)^n$ and $\left(\cos\frac{a}{n}\right)^{n^2}$ as n increases indefinitely.

12. Prove De Moivre's theorem for all indices.

Assuming that $\sin\theta=\theta\left(1-\frac{\theta^2}{\pi^2}\right)\left(1-\frac{\theta^2}{2^2\pi^2}\right)\ldots\ldots\ldots$

prove that $\cos\theta=\left(1-\frac{4\theta^2}{\pi^2}\right)\left(1-\frac{4\theta^2}{3^2\pi^2}\right)\left(1-\frac{4\theta^2}{5^2\pi^2}\right)\ldots$

Find the sum of the series $\frac{1}{1^4}+\frac{1}{3^4}+\frac{1}{5^4}+$ &c.

13. Through (0) one of the points of intersection of two given circles a variable line is drawn meeting the circles again in P and Q. Denoting $O\,P$ and $O\,Q$ by ρ and ρ' shew that $\frac{\rho^2}{r^2}+\frac{\rho'^2}{r'^2}-\frac{2\rho\rho'}{rr'}\cos\gamma=\sin^2\gamma$ when r, r^1 are the radii of the circles, γ the angle at which they intersect.

CONIC SECTIONS.

1. The two tangents which can be drawn from any point to a conic subtend equal angles at the focus.

2. The rectangle under the perpendiculars let fall from the foci on any tangent to an ellipse=the square of the semi-axis minor.

3. A line is drawn through the vertex (A) of a parabola perpendicular to a tangent meeting the tangent in P and the curve again in Q, prove that $V\,P.\ V\,Q$=constant.

4. Find the envelope of a variable line meeting two fixed lines, so that the circle circumscribing the triangle so formed passes constantly through a fixed point.

SECOND YEAR STUDENTS.

ANALYTICAL GEOMETRY.

1. Show that the equation of a line in rectangular co-ordinates may be written in the form $x\cos\alpha+y\sin\alpha=p$.

Explain what α and p denote. Find the length of the perpendicular on this line from any point $x'\ y'$ and also the equation of the same perpendicular.

2. Examine the position of the centre and the radius of the circle $2(x^2+y^2)=10x+14y+13$. Find the tangent to this circle at the point $x=\frac{11}{2}\ y=\frac{15}{2}$

3. Deduce the equation of the ellipse from the property that the sum of the focal distances is constant.

4. Find the locus of tangents to a parabola which cut at a fixed angle.

5. If two fixed points on an hyperbola be joined to a variable point, the portion which the joining lines intercept on either asymptote is constant.

6. Find the locus of points which have same eccentric angles on a system of confocal ellipses.

7. The vertex of a right-angled triangle is fixed, and its two base angles lie on a conic; prove that the foot of the perpendicular on the base lies on a circle.

8. From any point four normals real or imaginary can be drawn to the conic $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$.

Appendix, No. 3.

General Class Examination.

Show that if the equation of the chord joining one pair of the points where they meet the curve be $x\cos\alpha+y\sin\alpha-p=0$ that of the chord joining the other pair is $\frac{x}{a^2\cos\alpha}+\frac{y}{b^2\sin\alpha}+\frac{1}{p}=0$.

9. Show that if the two pairs of lines represented by the equations $ax^2+2bxy+cy^2=0$ $a'x^2+2b'xy+c'y^2=0$ form an harmonic pencil, $ac'+a'c-2bb'=0$.

10. Determine the equation of the circle circumscribing the triangle of reference in trilinear co-ordinates.

SPHERICAL TRIGONOMETRY.

1. Explain what is meant by the polar triangle, and demonstrate its different relations to the primitive triangle.

2. Assuming that in a right-angled spherical triangle, $\cos c=\cos a\cos b$. $\sin a=\sin c.\sin A$, prove the expression for the cosine of the angle of any triangle in terms of the sides, as well as the formula connecting two sides and two angles when all four are contiguous.

3. Given base and sum of sides of a spherical triangle, prove that $\frac{\cos\phi}{\sin\frac{1}{2}C}=$constant, when $C=$vertical angle $\phi=$ angle which the arc bisecting the external vertical angle makes with the base.

DIFFERENTIAL AND INTEGRAL CALCULUS.

1. Investigate from first principles

$$\frac{d\tan x}{dx}\qquad\frac{d(\sqrt{x})}{dx}\qquad\frac{d\sin^{-1}x}{dx}$$

2. Differentiate

$$\frac{2x^2-1}{3x^3}\cdot\sqrt{1+x^2}\qquad\frac{1}{\sqrt{2}}\sin^{-1}\left(\frac{x\sqrt{2}}{1+x^2}\right)\qquad 2^{\tan x}\quad\sec(2^x).$$

3. Show that $\frac{x-\sin x}{x^3}$ is a maximum when $x=\pi$.

From the expression for the area of a triangle in terms of the sides, find by differentiation the value of a supposed variable in terms of b and c, supposed constant, when the area is a maximum.

4. Investigate the equation of the osculating circle at any point of a curve.

Show that the evolute of the rectangular hyperbola $xy=m^2$ is given by the equation $(x+y)^{\frac{2}{3}}-(x-y)^{\frac{2}{3}}=(4m)^{\frac{2}{3}}$

5. Express $\frac{r^3\frac{dr}{d\theta}}{r^2+\left(\frac{dr}{d\theta}\right)^2}$ in terms of x and y, where $x=r\cos\theta$ $y=r\sin\theta$.

6. Investigate 1° in x and y co-ordinates, 2° in r and p co-ordinates, the equation of the hypocycloid when the rolling circle has one-fourth the radius of the fixed circle.

7. The vertex of an angle of constant magnitude lies on a given right line, and one side passes through a fixed point, find the envelope of the other side.

8. Sum the following series, without the introduction of imaginaries:

$$x-\frac{x^3}{3}+\frac{x^5}{5}-\text{\&c., ad infinitum, where } x<1$$

$$\sin\theta+\frac{1}{2}\sin2\theta\frac{1}{3}\sin3\theta+\text{\&c., where } \theta<\pi.$$

Appendix,
No. 8.

General Class Examination.

9. Required,

$$\int\{\sqrt{1+x}+\sqrt{1-x}\}\,dx \quad \int \tan x\,dx$$

10. Integrate

$$\frac{d\theta}{\sqrt{b+x^2\sec^2\theta}} \quad \frac{x^2dx}{x^3+x^2+x+1}$$

11. Find the area of the loop of the curve

$$x^3+y^3-3\,axy=0.$$

12. Determine

$$\int_1^\infty \frac{dx}{x^5\sqrt{x^2-1}}$$

NATURAL PHILOSOPHY.—*Examiner, Professor Everett.*

EXPERIMENTAL PHYSICS.

1. Describe an experimental illustration of the parallelogram of forces.

2. What is the ratio of the power to the weight for the inclined plane, (1) when the power acts parallel to the plane, (2) when the power acts horizontally?

3. Describe the Torricellian experiment, and show how it illustrates the principle of the suction pump.

4. Enunciate the "principle of Archimedes," and apply it to deduce the specific gravity of a body whose weights in air and water are W and w respectively. What is to be understood by the "weight in water" of a body which is specifically lighter than water?

5. In a hydraulic press, the internal diameters of the two cylinders are as 1 to 12. Find the mechanical advantage, supposing the power to be applied directly to force the piston into the smaller cylinder; and show that the work done by the power is equal to the work done against the weight.

6. A U-shaped tube open at both ends is about half filled with mercury, and water is then poured into one leg. State precisely the relation which will exist between the levels of the two fluids and their specific gravities.

7. Compare the centigrade scale of temperature with that of Fahrenheit, (1) as regards the lengths of their degrees, (2) as regards the mode of reducing a temperature from the latter scale to the former.

8. What is the unit of heat adopted in connexion with Fahrenheit's scale, and what is meant by the statement that the latent heats of water and steam are 143 and 967° respectively?

9. If the specific heat of mercury be ·033, what will be the temperature of a mixture of 2lbs. of mercury at 40° with 1lb. of water at 50°?

10. Describe an experiment showing the dual character of electric action, and state briefly the theories of Franklin and Dufaye.

11. Explain the mode of procedure in charging a gold-leaf electroscope by induction.

12. What is the electrical effect of a jet of water flowing from an insulated metallic vessel through a projecting pipe into the open air and breaking into drops before reaching the ground?

13. A galvanic battery gives a current of strength s with a certain connecting wire, and when the length of this wire is doubled, the strength of the current falls to $\frac{2}{3}s$. Compare the resistance in the battery with that in the first wire.

Appendix, No. 8.
General Class Examination.

14. Give Ampère's rule for the direction in which a magnetic needle is deflected by an electric current.

15. Describe Colladon's experiments on the velocity of sound in water, and state the results.

16. If the velocity of sound in air be 1092 feet per second, find the wave length of a musical note which makes 91 vibrations per second, also of its third, fifth, and octave.

17. Describe the positions of the nodes in the vibrating column of air within a tube open at both ends, in the production of the fundamental note and of the first overtone, and indicate the wave length in both cases.

18. If the two beams of light obtained by double refraction through Iceland spar be analysed by a tourmaline or Nicol's prism, what phenomena are exhibited, and what is the explanation on the undulatory theory?

MATHEMATICAL PHYSICS.

1. Explain the statement that the pound is a unit of mass, not of force; and specify a unit of force which is invariable.

2. Enunciate "the parallelogram of forces" and deduce from it "the polygon of forces."

3. Find the resultant of two forces 7 and 8 which contain an angle of 120°.

4. Find the total horizontal component of a set of forces whose magnitudes are represented by the numbers 1, 2, 3, 4, the first three acting at angles of 60°, 45° and 30° respectively above a horizontal line, and the fourth at an angle of 60° below it.

5. Investigate the magnitude and position of the resultant of two parallel forces acting towards the same parts.

6. Define a statical couple, and state the conditions of equivalence of two couples.

7. How is uniform acceleration measured when the motion is confined to one straight line? If a force equal to the weight of a pound acts upon a mass of a pound, what is the amount of acceleration produced? Write down a formula for acceleration in terms of moving force and mass moved, stating the units employed.

8. A body slides without friction down a plane inclined to the horizon at 30°. Find the space described in 3 seconds from the commencement of motion. Show that the velocity acquired in sliding without friction down any inclined plane is equal to that acquired in falling freely through the height of the plane.

9. What are the measures of "work done" and "kinetic energy?" When a body falls freely, what is the loss of potential energy in each foot of fall? Show that this loss is equal to the increase of kinetic energy.

10. Define the "index of refraction" of a substance, and point out its connexion with total reflection.

11. A small object is placed 2 feet in front of a convex lens whose focal length is 18 inches. Where will the image be formed, and what will be its linear dimensions as compared with those of the object?

12. The image of a lamp flame is formed upon a screen at the distance of 6 feet by means of a convex lens. What is the greatest focal length admissible?

13. Describe the method of finding the latitude of a ship at sea by an observation of the sun, and state briefly how the longitude is found.

14. State Kepler's laws and Newton's deductions from them.

15. Show how the mass of a planet which has satellites can be compared with that of the sun.

16. In a Mariotté's tube, the mercury stands 10 inches higher in the longer leg than in the shorter. Compare the density of the air in the shorter leg with that of the external air, the barometer standing at h inches.

MATHEMATICAL PHYSICS.

HONOR CLASS.

1. Find, by the integral calculus, the centres of gravity of a cone and of a frustrum of a cone.

2. Employ Guldinus' properties to find the volume and surface of an anchor ring.

3. Write down the general equations of equilibrium of a rigid body, and the general equations of motion of a rigid body acted upon by any forces.

4. Prove that equal areas are described in equal lines by a moving particle about a centre of force.

5. A particle describes an equiangular spiral under the influence of a force directed towards the pole. Show that the force is inversely as the cube of the distance.

6. A particle constrained to move in a straight line is acted on by a force directed towards an external point. Show that if the amplitude of the oscillations be small in comparison with the distance of the centre of force, they will follow the simple harmonic law; and find the period.

7. Investigate the attraction of a uniform circular arc on a point at the centre of the circle; and show that the attraction of a uniform straight line on any external point may be hence derived.

8. If dA denote an element of area of a closed surface within which a mass m of matter is contained, and if N be the component of the attraction of m in the direction of a normal drawn inward, show that $\int N dA$ for the whole surface is $4\pi m$.

9. Investigate the equation to the common catenary.

10. Show that when a string is stretched round a smooth cylinder in a plane perpendicular to the axis of the cylinder, it exerts a normal pressure $\frac{T}{R}$ per unit length, T being the tension of the string, and R the radius of the cylinder.

11. Prove that the centre of gravity of a system of bodies subject to no external forces, remains at rest or moves uniformly in a straight line.

12. Prove that the moment of inertia of a lamina about an axis through any point perpendicular to its plane is equal to the sum of the moments of inertia about two rectangular axes through the same point in its plane.

13. Find the moment of inertia of a circle about a diameter.

14. Investigate the position of the centre of percussion of a rigid body with respect to a given axis.

NATURAL PHILOSOPHY APPLIED.

1. Explain what is meant by the "*limiting angle of resistance*," "the angle of repose," and the "*coefficient of friction*;" and show how the coefficient of friction for one body sliding on another, or on the point of sliding on it, may be derived from experiments determining the angle of slope of the one body placed as an inclined plane, which would just permit

Appendix, No. 8.

General Class Examination.

the other body to slide down without acceleration, or would allow it to lie at rest.

2. Distinguish between that which is commonly called the indicated power of a steam-engine, or may better be called the indicated power *in the engine*, and the power actually given from a rotative engine to the shafting driven by it: also distinguish between the indicated power in a pumping steam-engine and the power realized in water actually raised.

3. According to an investigation frequently put forward, the torsional moment of the friction of a flat pivot for end thrust is stated to be $\frac{2}{3}\rho Q\mu$, where ρ is the radius of the pivot, Q the total end thrust, and μ the coefficient of friction. Explain the nature of the assumptions which have led to this as a result: and show how these are untenable, and the result is fallacious.

4. In reference to Moseley's Theory of the Arch, including the Plate Bande, conceive of a Plate Bande of extremely hard and strong material, with firm abutments of the same character, and with vertical joints between the blocks themselves and between them and the piers or abutments, and that the joints are quite closely fitted. Suppose that on the removal of the support used in building, the resistances or pressures arrange themselves symmetrically on the two sides of the middle of the plate bande. Explain what would be the nature of the change which would occur in the "line of resistance" if one pier were to yield downwards by any very small amount while powerfully resisting outward thrust, so as not to yield outward.

5. Explain how in a girder bridge of two or more spans an increase of strength can be attained by introducing the "*principle of continuity*;" and what is meant by the points of inflexion in such bridges.

6. Explain the following expressions, distinguishing between such of them as are really distinct in signification. (1) A force applied to a mass of matter from without. (2) Stress introduced into a mass of matter in the simple case of push or pull. (3) Mechanical work or mechanical energy communicated to a mass of matter or to a machine, and given out at another part. (4) Mechanical energy put in store for future use, in the bending of a spring, in the motion of a flywheel, and in the raising of a weight. (5) Kinetic energy. (6) Vis viva. (7) Potential energy. (8) Mechanical energy spent or lost in friction, but still remaining as energy transformed into another condition from that of mechanical energy.

7. In a round bar subjected to torsional strain, what kind of strain, or of stress, are small elementary parts of the material subjected to; the elementary parts being taken small in all their linear dimensions comparatively to the radius of the bar.

8. Prove that a plane figure may be moved to any position in its plane by a single rotation.

9. Determine the position of the instantaneous axis.

(1) Of a straight line moving with ends on two fixed straight lines in one plane.
(2) Of the connecting rod of a steam-engine.
(3) Of a circle rolling along a straight line.

10. Investigate the angular velocity-ratio

(1) Of two arms turning about parallel axes and connected by a link.
(2) Of two pieces turning about parallel axes and having sliding contact with each other.

11. State the kinematical condition to be fulfilled by the teeth of wheels, and show that it may be fulfilled by epicycloids and hypocycloids.

Appendix, No. 8.

General Class Examination.

12. Prove that $\int r^2 dm$ is a proper measure of the moment of inertia of a body about an axis.

13. Investigate the moment of inertia

(1) Of a rectangle about an axis through its centre parallel to one side.

(2) Of a rectangular parallelopiped about an axis through its centre parallel to one edge.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. Define precisely what is meant by the dew point, and describe how it may be observed directly, and also calculated indirectly from the indications of the wet bulb thermometer.

2. Explain the difference between the capacity of heat of a body under a constant volume and under a constant pressure. How has the value of this difference been determined experimentally in the case of gases?

3. Calculate the density of hydrochloric acid gas from the densities of its constituents; also of carbonic oxide, carbonic acid, and phosphuretted hydrogen. (Den. of hydrogen 0·069; chlorine 2·470; oxygen 1·106; vapour of carbon 0·829; vapour of phosphorus 4·28.)

4. Describe the preparation and principal properties of chlorine.

5. Write the formulas, according to the new notation, of nitric anhydride, sulphuric anhydride, nitric acid, and sulphuric acid; and explain why the formula nitric of acid contains only one atom of hydrogen, while that of sulphuric acid contains two atoms.

6. How is metallic magnesium prepared, and what are its properties?

7. Describe the method of determining the density of a vapour. How is the process modified when a very high temperature is required?

8. Under what conditions do carbon and nitrogen unite to form cyanogen? State also its composition and properties.

9. Give an account of the alcoholic fermentation, and calculate the amount of carbonic acid produced by the fermentation of 1 gramme of sugar.

10. What is the composition of sodium alcohol, and how is it prepared? Is this body of any theoretical interest?

11. How would you analyse a mixture of oxygen, nitrogen, carbonic acid and carbonic oxide gases?

12. Describe generally the analysis of a mineral containing silica, alumina, lime, magnesia, and potash.

ENGINEERING STUDENTS.

Omit questions 7, 8, 9, *and* 10, *and substitute*—

7 (*bis*). Give an account of electrical induction and describe the common gold leaf and Bohnenberger's electroscopes.

8 (*bis*). What are the conditions to be chiefly attended to in the construction of a thunder rod?

9 (*bis*). Describe the alphabet telegraph.

10 (*bis*). How is a diamagnetic body characterized?

PASS PAPER.

1. What are the laws of the expansion of gaseous bodies by heat?

2. How is the tension of aqueous vapour at common temperatures determined?

Appendix, No. 8.

General Class Examination.

3. How is solid carbonic acid prepared, and what are its properties?

4. What is the composition of water by weight and by volume, and how has this composition been determined?

5. Give an account of the method of analysing atmospheric air.

6. Describe the preparations and chief properties of phosphuretted hydrogen.

7. What are the chemical relations between starch and sugar?

CIVIL ENGINEERING.—*Examiner, Professor James Thomson.*

FIRST YEAR STUDENTS.

GEOMETRICAL DRAWING.

1. In descriptive Geometry, two straight lines and a point being given by their projections; explain how the projections may be found of a straight line passing through the given point and intersecting both the given lines. This may be easily and fully answered without a diagram.

2. In the accompanying diagram, sheet (*A*) in which $x\ y$ is the "ground line," a green plane, and a red plane and a blue plane are shown by their traces in their respective colours. It is required to find by accurate construction the projections of the point of intersection of the three given planes. Your construction is to be accompanied by brief explanations.

3. In the accompanying diagram, sheet (*B*) in which $x\ y$ is the "ground line," a red straight line $a\ b$, $a'\ b'$ and a blue straight line $c\ d$, $c'\ d'$ are given by their projections. Find accurately the traces of the plane which passes through the red line and is parallel to the blue line: and explain your construction.

4. On a horizontal and a vertical plane of projection, given the projections of a circle whose plane is perpendicular to both planes of projection, and given a point on the horizontal projection as being the projection of a point of the upper half of the circumference of the circle. Show how to find the vertical projection of that point.

5. In order that a picture may be a true representation in Geometrical or Linear Perspective of a given object, what is the essential condition which it must be adapted to fulfil.

6. What are Isometrical Drawings?

7. Given the projections of two straight lines to find the angle between the lines. A mode or some modes of solving this can easily be explained sufficiently without a diagram; but you may use a diagram if you prefer to do so.

8. Make an isometrical projection of the tank shown in the diagram sheet which will be handed to you, the dimensions in the diagram being taken as those of a model to be isometrically projected.

9. Explain clearly some one of the methods for making drawings in perspective which have been taught in the course of the present Session.

10. Prove that in the perspective picture of a house having the slanting top edges of the gable end in front and behind inclined equally to the horizon the vanishing points for those slant edges will be situated in a vertical line of the picture and at equal distances above and below the horizon line; the picture surface being, as usual, a vertical plane.

11. Give brief explanations on the drawing of shadows as taught in the present Session.

12. Show clearly at least three good practical methods for describing a true ellipse.

13. A given vertical right circular cone is cut by a given plane parallel

Appendix, No. 8.

General Class Examination.

to the vertical plane of projection. Show how to find the vertical projection of the section.

14. In a diagram sheet which will be furnished to you, given the quadrilateral, *a b c d* as the perspective representation on a vertical picture plane of a horizontal square. It is required to find the horizon line, the centre of the picture, and the eye point.

SECOND YEAR STUDENTS.

SURVEYING, LEVELLING, MENSURATION, &c.

1. Describe the mode of plotting the chain lines of a traverse survey by Howlett's semicircular protractor, explaining at the same time the nature of that instrument.

2. Butler Williams in his Practical Geodesy, in treating of the adjustments of the theodolite, after directing that the tube of the eye-piece should be drawn out till the cross-wires appear clearly defined, says that any apparent motion of the distant object relatively to the cross-fibres caused by a slight motion of the eye laterally is due to parallax, and that the adjustment for getting rid of the parallax consists in drawing out the tube of the eye-piece a little more or less until the required stability of the image takes place. Tell what is right and what is wrong in these directions and statements of Butler Williams; and give clear and accurate explanations of the proper proceedings for obtaining distinctness of vision of the wires, and for getting rid of parallax, mentioning the chief occasions on which the adjustments in question may be required.

3. When the telescope of a Y theodolite, or level, which is a perfectly good instrument free from structural faults or injuries, but has its various adjustments disarranged, is made to revolve in its Ys, a certain line of the telescope retains its position unchanged. State precisely what that line is.

4. Give examples of, at least, two forms of field level books either commonly used, or convenient for use: and give clear and full explanations of the modes of using them, and of the meanings and uses of all the columns. It is not required that you should insert assumed examples of field notes with calculations founded on them:—but the blank forms of field book, well explained, will suffice.

5. In calculating the weight of a wrought-iron connecting rod from a design, the middle portion is proposed to be calculated by itself. This middle portion is a solid of revolution, being turned in the lathe. Its length is 6 feet; the diameter at one end *A* is 5 inches; diameter at the other end *B* $5\frac{3}{4}$ inches; diameter at middle $6\frac{1}{4}$ inches; diameter midway between the middle and the end *A* is 6 inches; and the diameter midway between the middle and the end *B* is $6\frac{1}{4}$ inches. The outline of the bar, or section of its surface by a plane passing through the axis of revolution, is a steady curve. It is required to find the weight in lbs. counting that each cubic inch of the wrought-iron weighs ·28 lbs.

In the data you may observe that an odd number of equidistant cross measurements are given, and this may lead you to adopt a well-known method which, for such cases, is suitable and good. You may show if you can more methods than one, and explain their relative merits.

6. In a circular railway curve of 50 chains radius, calculate the angle subtended at the circumference in minutes, by an arc of 84 links length.

7. In the curve named in the foregoing question find the length of the arc in links, which subtends at the centre an angle of 26° 35′.

8. In the transit theodolite, what are the adjustments required to be made or tested between the line of collimation, the horizontal axis, and

the bubble tube on the telescope; what part of these adjustments is required in order to have the instrument perfectly adapted for measurements of azimuthal angles including the ranging of straight lines on the ground, and how may that part of the adjustments be tested and be effected if found necessary by the testing?

9. In the transit theodolite which you have used or seen in the College, how are the horizontal circle and the vernier divided or graduated; and for what degree of minuteness in the reading of angles are they adapted?

10. State and demonstrate the formula taught in the lectures, for checking the measurement of the sides of a triangle by use of a measured split line, and of the measured segments of the base.

SECOND YEAR ENGINEERING STUDENTS.

OFFICE AND FIELD WORK.

1. Give the reading of the horizontal limb of the theodolite submitted to you.

2. A right circular cone (a solid of revolution) stands with its base upwards, and its vertex on the horizontal plane of projection, and with its axis vertical:—show how to construct its shadow cast on the horizontal plane of projection; and to find the projections of the lines of separation of the illuminated and shaded parts of the conical surface.

The light is to be taken, in this question and the next, as falling in the direction usually assumed.

3. A cylinder, of the kind which is a surface of revolution, terminated at both ends by planes perpendicular to its axis, is placed lying on the horizontal plane of projection, and having its axis at an angle of 45° with the vertical plane of projection, and with its end which is next the vertical plane of projection in contact with that plane:—show how to construct its shadow cast partly on the vertical plane and partly on the horizontal plane of projection.

You are advised to take up two cases; one in which the shadow of the end farthest from the vertical plane of projection falls on the horizontal plane of projection without extending to the "ground line," and the other in which the shadow of a part of that end falls on the vertical plane of projection.

4. In the case of a survey made by the chain and offset staff, by triangles with measured sides together with offsets, explain in detail the method or methods you know for determining the areas of the fields or enclosures. Observe that areas are sometimes calculated directly from the field book, and sometimes taken from a map plotted from the field book.

SECOND AND THIRD YEAR STUDENTS, AND COATES'S PRIZE.

5. Find by Sir John MacNeill's Tables, and by Bidder's Table, both of which will be offered to you, the quantity of earth in a cutting with the following data:—

Formation width, 18 feet, slopes $1\frac{1}{2}$ to 1.
End heights, 25 and 21 feet.
Length, 66 feet.

6. How may Gravatt's level be tested in the field to ascertain whether it gives level sights or not? You should explain clearly a practical process for doing this.

7. Taking for granted that Professor Rankine's method for ranging

circular curves for railways by angles at the circumference, as taught in his manual of Civil Engineering, is sufficiently understood, explain how the process may be modified so as to introduce the curvature gradually in passing from each straight tangent into the main circular bend of the curve.

Appendix, No. 8.
General Class Examination.

8. Explain the meanings of the following set of headings for the columns of a table for computations of a Traverse Survey, and explain the uses of the several columns:—(1) Courses, (2) Distances, (3) Northings, (4) Southings, (5) Eastings, (6) Westings, (7) Total Northings, (8) Total Eastings, (9) Sums of Total Northings, (10) Sums of Total Eastings, (11) East Products, (12) West Products, (13) North Products, (14) South Products.

THIRD YEAR STUDENTS AND COATES'S PRIZE.

9. Give explanations to such extent as you readily can of the measurement of heights by use of the barometer aided by the thermometer.

10. Explain how the development of the soffit of a semicylindric oblique bridge may be drawn on a small scale:—and deduce a method taught in the lectures or in Buck's Treatise by which one-half of one curved side of the development may be drawn of full size, or on a large scale, without the requirement of an inconveniently large plane of delineation, ordinates oblique to an abscissa being used for determining the curve.

QUESTIONS FOR THIRD YEAR STUDENTS, AND COATES'S PRIZE CANDIDATES.

CIVIL AND MECHANICAL ENGINEERING AND ARCHITECTURE.

1. If a round bar or shaft of wrought iron has (as such shafts often have) longitudinal flaws or laminations, such as faces of imperfect adhesion of separate bars out of which the shaft has been forged; how would these imperfections be liable or likely to affect the strength of the shaft for use in the following distinct cases; would they do little harm in some cases and much in others? (1) Cross bending, (2) Torsion, (3) Pull, (4) Push.

2. In different structures, bridges, for instance, similar to one another in form at all parts, and of the same material, but of different sizes, how must loading similarly disposed vary with the linear dimensions of the structures if the material is to be strained with equal severity at corresponding places in all of them, or if it is to have the same intensity of stress in all at corresponding places. Would the similarly disposed weights of the structures themselves make up a loading which would accomplish the condition named, or would it produce more severe strains in some cases than in others.

3. A semi-girder (that is a beam fixed at one end projecting horizontally outwards) is to have its cross section similar at all parts. In order to make it of equal strength at all parts against taking set or against rupture by loading at its outer end, how must the depth or breadth vary with the distance from the outer end?

4. A straight beam of uniform cross section all along, is supported at both ends so as to lie horizontally, and the supports are so arranged as to give to the ends of the beam forces acting vertically upwards. The beam is so formed as to be perfectly straight when resting on its two supports. Then two equal weights are applied on the beam at equal distances from the ends. What curve will the part between the weights assume: and why?

5. What is meant by the modulus of elasticity of a material, or what do you define it to be?

Appendix, No. 8.

General Class Examination.

6. Describe the Corinthian and Composite Orders of Architecture sufficiently to distinguish them from all other orders and from one another.

7. Explain the meanings of the following terms in Architecture:—Architrave, Frieze, Torus, Ovolo, Ogee, Scotia, Abacus, Apophyge, Corbel, Finial, Transom, Mullion.

8. Mention and briefly describe the styles of Mediæval Architecture, sometimes called Gothic, and sometimes Norman and Gothic, which prevailed in England from the time of the Norman Conquest till the close of the reign of Henry VIII. according to the generally accepted nomenclature of Rickman taught in the lectures.

9. By means of a sketch accompanied by a written explanation in words, explain the form and the mode of action of the penetrating end of an ordinary drill for boring into iron, brass, and other metals, which is suited for rotation in only one direction. Also distinguish between its form and that of an ordinary cutler's drill which receives from the drill bow a reciprocating rotation.

10. Tell what you can of the nature of chilled castings, and of case-hardened forgings, making the distinction clear between the methods used in the two cases for obtaining a hard superficial lamina for iron.

11. In oblique bridges explain how to determine the "adjusted angle of skewback of the intrado," and the corresponding angle for the extrado.

12. Explain the chief steps of an investigation taught in the lectures, which shows the geometrical conditions on which the existence of the point called the "*focus*" for the face joints of an oblique bridge depends; and which determines the "*eccentricity*."

13. State briefly what you consider the most remarkable properties of Portland and Roman Cements, and describe briefly the main features of the modes of their manufacture.

14. State in full or give information respecting an arbitary rule proposed by Mr. Leslie for drawing a distinction between the "ordinary," or "average summer discharge," of a stream and the "flood discharge," and tell how it is that these and their distinction come usually to be matters of importance between promoters of a water work and the owners of lands, mills, &c., along the rivers or streams from which supplies of water are proposed to be drawn.

15. In regard to the flow of water in pipes and canals, what is meant by the declivity, the virtual declivity, the wetted perimeter, and the hydraulic mean depth, and what is meant by the expression virtual fall when a quantity of water is said to make a virtual fall in a case in which it really moves horizontally or even ascends?

16. Explain what is meant in Treatises on Hydraulics by the following terms, as applied in respect to the flow of water through orifices in thin plates:—Coefficient of contraction, coefficient of velocity, coefficient of discharge, theoretical velocity, and theoretical discharge.

17. A brass pipe of which the cross-section is two square inches, and of which the bore is three square inches, has a bar of wrought iron of three square inches cross-section inserted through it so as to fill it from end to end, and the brass and iron are firmly and immovably fixed together at their ends when at a temperature of 60° Fahr. Explain how to find,—or at least sketch out the method on which you would proceed to investigate the pull which will be introduced into the brass when the iron and brass together are cooled to 32° Fahr. on the supposition that the moduli of elasticity of the iron and brass are known, and also their respective expansions by heat; and that during the cooling neither the iron nor the brass is strained beyond the limit of elasticity.

General Class Examination.

Natural Philosophy.—*Examiner, Professor Everett.*

EXPERIMENTAL PHYSICS.

1. If the radius of the wheel be 18 inches, and that of the axle 2 inches, what force acting at the circumference of the wheel, will equilibrate 112 lbs. acting at the circumference of the axle?

2. Distinguish between the three kinds of lever, and show which of them involve mechanical advantage.

3. A body falling freely strikes the ground at the end of 5 seconds. Find the velocity with which it strikes the ground and the distance fallen.

4. Define specific gravity, and find the specific gravity of a body which weighs 7·2 lbs. in air and 2.5 lbs. in water.

5. Define specific heat, and describe a mode of finding the specific heat of a solid.

6. The latent heat of steam being 537° C., how much water will be raised from 0° to 100° C. in condensing a pound of steam at 100° C.?

7. Define "index of refraction," illustrating the definition by a figure.

8. If the indices of refraction of glass and water be $\frac{3}{2}$ and $\frac{4}{3}$ respectively, what is the index of refraction from water to glass?

9. Enumerate the colours of the solar spectrum in order, beginning with the least refrangible, and describe the distribution of the heating and chemical rays.

10. What is meant by the principal focus—(1) in the case of a convex lens—(2) in the case of a concave lens?

11. If rays diverge from a point 1 foot in front of a convex lens of 6 inches focal length, to what point do they converge?

12. State the general principle upon which the possibility of constructing achromatic lenses depends.

13. State approximately the velocities of sound in air, water, and iron.

14. What is the law which connects the velocity of sound, the wave-length of a note, and the number of its vibrations per second?

15. What note is produced when a musical string is lightly touched at the middle of its length and at the same time excited by a bow?

16. Describe a mode of magnetising iron by means of an electric current, and a mode of exciting an electric current in a wire by means of a magnet.

Natural History.—*Examiner, Professor Wyville Thomson.*

BOTANY.

1. Describe the structure of the leaf-stalk and its principal modifications in form.

2. Describe and give diagrams of the different forms of inflorescence.

3. Name some forms of vernation, and of æstivation, mentioning plants and natural orders in which they severally occur.

4. What are the differences between an animal and a vegetable cell?

5. Give the characters of the sub-orders of the compositæ and the leguminosæ. Name officinal or economic plants in each, and state their properties and uses.

6. Describe the mode of reproduction in ferns.

7. State what is known with regard to the phenomenon of irritability in plants.

8. Describe the ovary and fruit of any plant you may choose, detailing the structure of the ovary and the position of the placenta and of the ovules; and the changes which take place (in the example chosen) in ovary, ovules, and seeds, as the fruit advances to maturity.

Appendix, No. 8.

General Class Examination.

Practical Chemistry.—*Examiner, Dr. Andrews.*

HONOR QUESTIONS.

1. Describe the action of sulphide of ammonium on the salts of iron and of mercury.

2. How would you analyse an alloy of silver, copper, and iron?

3. Describe the uranium process for determining the amount of phosphoric acid in urine.

4. Calculate the change of weight which 100 grains of dry oxalate of lime undergo when converted into carbonate.

5. Give an account of the action of polarised light upon a solution of cane sugar.

6. How would you distinguish a calculus of cystine from one of uric acid?

7. How is the presence of sulphur in albumen proved experimentally?

8. How is the standard solution for Clark's soap test prepared?

[The students were also required to make a qualitative examination in the laboratory of certain compound bodies.]

PASS QUESTIONS.

1. What are tests for potash and soda?

2. How would you analyse magnesian limestone?

3. What are the properties of the oxalate of lime calculus?

4. What are the microscopic characters of uric acid, cystine, and oxalate of lime?

5. What are the tests for arsenious acid?

6. How would you prepare urea, (*a*) from urine, and (*b*) artificially?

Matriculation Examination.

MATRICULATION EXAMINATION—OCTOBER, 1868.

The English Language.—*Examiner, Professor Yonge.*

QUESTIONS.

1. At about what time did the English Language assume its present form? To what extent is it still undergoing change?

2. On what does it depend whether we should write enquire *or* inquire, entire *or* intire, honour *or* honor, honourable *or* honorable? Besides explaining the particular instances, give any general rule that occurs to you on the subject of orthography.

3. What was the influence of the Norman Conquest on the language of Britain?

4. It is acknowledged that Modern English is derived partly from Saxon, partly from Latin, partly from French, &c. Can the words derived from each be divided to any extent into distinct classes? and if so, what are the leading principles of such division?

Subject for Essay:

The Advantages of the Study of General Literature in every Career or Profession.

Mathematics.—*Examiner, Professor Purser.*

1. A woman buys apples at the rate of six for 5*d.*, and sells them at five for 6*d.* Find her gain per cent.

2. What sum invested in the Three per Cents. at 94 will yield an annual income of £175, the income tax being previously deducted at 5*d.* in the pound?

3. Find the lowest number into which all the numbers from 1 to 12 will go without a remainder.

4. Express $\frac{3}{7}$ of a shilling as a fraction of a half-crown.

Reduce to its simplest form $\dfrac{11\frac{5}{7}-7\frac{5}{11}}{5\frac{5}{22}-3\frac{1}{2}}$

5. Calculate to three places of decimals

$$\frac{\frac{1}{6}-\frac{1}{7}}{\frac{1}{7}-\frac{1}{8}} \quad \text{and} \quad \frac{\sqrt{7}-\sqrt{6}}{\sqrt{7}+\sqrt{6}}$$

EUCLID.

1. In any triangle the greater side is opposite the greater angle.

2. If a right line falling on two other right lines makes the alternate angles equal, these two right lines are parallel.

3. If a right line be divided into two equal, and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line joining the points of section.

ALGEBRA.

1. Divide x^3-27 by $x-3$, and $a(cy+bx)^2-2b(ax+by)(cy+bx)+c(ax+by)^2$ by $ax^2+2bxy+cy^2$.

2. Prove algebraically that if

$$\frac{x}{y}=\frac{a}{b} \text{ then } \frac{x-y}{x+y}=\frac{a-b}{a+b}$$

3. Solve the following equations :

$$(\alpha) \quad \frac{x-5}{3}+\frac{x}{2}=\frac{17}{2}-\frac{x-7}{4}$$

$$(\beta) \quad x-\frac{1}{5}\left\{9-\frac{4}{7}(10-x)\right\}=2$$

$$(\gamma) \quad \frac{(x-4)(x+3)}{(x-3)(x+1)}=1$$

PEEL PRIZES IN GEOMETRY.—*Examiner, Professor Purser.*

1. A rectilineal figure described on the hypotenuse of a right-angled triangle is equal to the sum of the similar and similarly described figures on the sides containing the right angles.

2. Given base of a triangle and ratio of sides, find locus of vertex.

3. The base angles of an isosceles triangle of given species lie on the circumference of a given circle, and one of the equal sides pass through a given point. Prove that the other does so also.

4. Given vertical angle and area of a triangle, prove that the difference between the square of the bisector of the base, and the square of half the base is constant.

Appendix, No. 8.

Matriculation Examination.

5. Show that the square of the tangent drawn from any point on one given circle to another circle which intersects it varies as the area of the triangle formed by joining the variable point to the two fixed points of intersection.

6. O is a fixed point on a circle, Q another fixed point on the tangent at O, find the locus of a point P such that if a chord OO' be drawn through it OO' may bear a constant ratio to PQ.

7. Two chords of given length but varying positions are inscribed in a circle. Show that either pair of lines connecting their extremities cut at a constant angle.

8. Describe any of the methods that have been proposed for finding two mean proportionals.

Scholarship Examinations.

SCHOLARSHIP EXAMINATIONS.—OCTOBER, 1868.

LITERARY SCHOLARSHIPS.—FIRST YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

I. Translate the annexed extract from the *Hellenica* of XENOPHON :—

οἱ δ' Ἀθηναῖοι πολιορκούμενοι κατὰ γῆν καὶ κατὰ θάλατταν ἠπόρουν τί χρὴ ποιεῖν, οὔτε νεῶν οὔτε συμμάχων αὐτοῖς ὄντων οὔτε σίτου· ἐνόμιζον δ' οὐδεμίαν εἶναι σωτηρίαν τοῦ μὴ παθεῖν ἃ οὐ τιμωρούμενοι ἐποίησαν ἀλλὰ διὰ τὴν ὕβριν ἠδίκουν ἀνθρώπους μικροπολίτας οὐδ' ἐπὶ μιᾷ αἰτίᾳ ἑτέρᾳ ἢ ὅτι ἐκείνοις συνεμάχουν. διὰ ταῦτα τοὺς ἀτίμους ἐπιτίμους ποιήσαντες ἐκαρτέρουν, καὶ ἀποθνησκόντων ἐν τῇ πόλει λιμῷ πολλῶν οὐ διελέγοντο περὶ διαλλαγῆς. . . . . οἱ δὲ πρέσβεις ἐπεὶ ἧκον οἴκαδε καὶ ἀπήγγειλαν ταῦτα εἰς τὴν πόλιν, ἀθυμία ἐνέπεσε πᾶσιν· ᾤοντο γὰρ ἀνδραποδισθήσεσθαι, καί, ἕως ἂν πέμπωσιν ἑτέρους πρέσβεις, πολλοὺς τῷ λιμῷ ἀπολεῖσθαι. περὶ δὲ τῶν τειχῶν τῆς καθαιρέσεως οὐδεὶς ἐβούλετο ξυμβουλεύειν. Ἀρχέστρατος γάρ, εἰπὼν ἐν τῇ βουλῇ Λακεδαιμονίοις κράτιστον εἶναι ἐφ' οἷς προὐκαλοῦντο εἰρήνην ποιεῖσθαι, ἐδέθη· προὐκαλοῦντο δὲ τῶν μακρῶν τειχῶν ἐπὶ δέκα σταδίους καθελεῖν ἑκατέρου. ἐγένετο δὲ ψήφισμα μὴ ἐξεῖναι περὶ τούτων ξυμβουλεύειν. τοιούτων δὲ ὄντων Θηραμένης ἐν ἐκκλησίᾳ εἶπεν ὅτι, εἰ βούλονται αὐτὸν πέμψαι παρὰ Λύσανδρον, εἰδὼς ἥξει Λακεδαιμονίους πρότερον ἐξανδραποδίσασθαι τὴν πόλιν βουλόμενοι ἀντέχουσι περὶ τῶν τειχῶν ἢ πίστεως ἕνεκα.

II. Translate in Attic Greek the following sentences, marking the accentuation :—

1. It is disgraceful that the ignorant should disobey the well-informed. 2. Through those who mismanage public affairs, an oligarchy was twice established. 3. He bids them go out through the wicket to the sea. 4. To be everywhere hunting for profit is least of all suited to the high-souled and the free. 5. It is said that the sun and moon are seen by them as they are. 6. We are angry with them on account of their claiming the tithe. 7. The so-called hump upon the back is peculiar to camels. 8. In which way does the nature of the universe possess perfect excellence? 9. Who thinks that our present inactivity will not one day be the cause of strange confusion? 10. The harm that befalls the enemy becomes the gain of the state. 11. In present circumstances the expectation of the future is pleasant, and so is the recollection of the past. 12. We are not on equal terms, while you ride on horseback and we are on foot.

Appendix, No. 8.

Scholarship Examinations.

I.—Translate these lines from the IInd Book of the *Ilias*:—

"εὖ γὰρ δὴ τόδε ἴδμεν[1] ἐνὶ φρεσίν, ἐστὲ δὲ πάντες
μάρτυροι,[1] οὓς μὴ κῆρες[1] ἔβαν θανάτοιο φέρουσαι
χθιζά[2] τε καὶ πρωΐζ'.[2] ὅτ' ἐς Αὐλίδα νῆες 'Αχαιῶν
ἠγερέθοντο[2] κακὰ Πριάμῳ καὶ Τρωσὶ φέρουσαι,—
ἡμεῖς δ' ἀμφὶ περὶ κρήνην ἱεροὺς κατὰ βωμοὺς
ἔρδομεν[1] ἀθανάτοισι τεληέσσας ἑκατόμβας,
καλῇ ὑπὸ πλατανίστῳ, ὅθεν ῥέεν ἀγλαὸν[2] ὕδωρ,—
ἔνθ' ἐφάνη[1] μέγα σῆμα. δράκων ἐπὶ νῶτα[1] δαφοινὸς[2]
σμερδαλέος,[2] τόν ῥ' αὐτὸς 'Ολύμπιος ἧκε[1] φάωσδε,
βωμοῦ ὑπαΐξας πρὸς τὸν πλατάνιστον ὄρουσεν.
ἔνθα δ' ἔσαν στρουθοῖο νεοσσοί,[2] νήπια[2] τέκνα,
ὄζῳ ἐπ' ἀκροτάτῳ πετάλοις ὑποπεπτηῶτες,[1]
ὀκτώ· ἀτὰρ μήτηρ ἐνάτη ἦν, ἣ τέκε τέκνα.
ἔνθ' ὅγε τοὺς ἐλεεινὰ κατήσθιε τετριγῶτας·[1]
μήτηρ δ' ἀμφεποτᾶτ' ὀλοφυρομένη φίλα τέκνα·
τὴν δ' ἐλελιξάμενος[1] πτέρυγος λάβεν ἀμφιαχυῖαν.[2]
αὐτάρ, ἐπεὶ κατὰ τέκνα φάγε στρουθοῖο καὶ αὐτήν,
τὸν μὲν ἀείδηλον θῆκεν θεὸς ὅσπερ ἔφηνεν·[1]
[λᾶαν γάρ μιν[1] ἔθηκε Κρόνου παῖς ἀγκυλομήτεω·[2]]
ἡμεῖς δ' ἑσταότες[1] θαυμάζομεν οἷον ἐτύχθη.[1]
Κάλχας δ' αὐτίκ' ἔπειτα θεοπροπέων[2] ἀγόρευεν·
'τίπτ' ἄνεῳ[2] ἐγένεσθε, κάρη[1] κομάοντες 'Αχαιοί;
ἡμῖν μὲν τόδ' ἔφηνε τέρας μέγα μητιέτα[2] Ζεύς,
ὄψιμον ὀψιτελές, τοῦ τε κλέος οὔποτ' ὀλεῖται.
ὡς οὗτος κατὰ τέκνα φάγε στρουθοῖο καὶ αὐτήν,
ὀκτώ, ἀτὰρ μήτηρ ἐνάτη ἦν ἣ τεκε τέκνα,
ὣς ἡμεῖς τοσσαῦτα ἔτεα πτολεμίξομεν αὖθι,
τῷ δεκάτῳ δὲ πόλιν αἱρήσομεν εὐρυάγυιαν.'[2]
κεῖνος τόσσ' ἀγόρευε· τὰ δὴ νῦν πάντα τελεῖται.
ἀλλ' ἄγε μίμνετε[1] πάντες, ἐυκνήμιδες 'Αχαιοί,
αὐτοῦ, εἰσόκε ἄστυ μέγα Πριάμοιο ἕλωμεν."

II.—1. Parse fully and accurately the words to which the figure 1 is attached, giving the Attic forms wherever they differ from the Homeric.

2. Derive or decompound the words to which the figure 2 is attached.

3. (*a*) Write out the 1st, 7th, 13th, 22nd, 27th, and 31st lines, dividing the feet and marking the quantity of the syllables. (*b*) Discriminate the *hiatus* according as they are or are not legitimate, and show how such as are illicit may be remedied.

LATIN.—*Examiner, Professor William Nesbitt, M.A.*

I.—Translate :—

Audiebam Pythagoram Pythagoreosque, incolas paene nostros, qui essent Italici philosophi quondam nominati, numquam dubitasse quin ex universa mente divina delibatos animos haberemus. Demonstrabantur mihi praeterea quae Socrates supremo vitae die de immortalitate animorum disseruisset, is qui esset omnium sapientissimus Apollinis oraculo iudicatus. Quid multa? sic mihi persuasi, sic sentio, quum tanta celeritas animorum sit, tanta memoria praeteritorum futurorumque prudentia, tot artes, tantae scientiae, tot inventa, non posse eam naturam, quae res eas contineat, esse mortalem, quumque semper agitetur animus nec principium motus habeat, quia se ipse moveat, ne finem quidem habiturum esse motus, quia numquam se ipse sit relicturus, et, quum simplex animi natura esset neque haberet in se quidquam admixtum dispar sui atque dissimile, non posse eum dividi, quod si non

Appendix,
No. 8.
Scholarship Examinations.

possit, non posse interire, magnoque esse argumento homines scire pleraque ante quam nati sint, quod iam pueri, quum artes difficiles discant, ita celeriter res innumerabiles adripiant, ut eas non tum primum accipere videantur, sed reminisci et recordari. Haec Platonis fere.

(*a*) Explain the use of the subjunctive in the phrases *qui essent nominati*, and *is qui esset judicatus.*

(*b*) For what reason were the followers of Pythagoras designated *Italici?* Mention the dialogue of Plato to which reference is made.

(*c*) Mention the interlocutors in the '*de Senectute*' of Cicero, and enumerate the topics discussed by Cato.

II.—Translate :—

1. Tum consul misso senatu in contionem prodit. ibi curae esse patribus ostendit, ut consulatur plebi. ceterum deliberationi de maxima quidem illa, sed tamen parte civitatis, metum pro universa re publica intervenisse. nec posse, cum hostes prope ad portas essent, bello praevertisse quicquam; nec, si sit laxamenti aliquid, aut plebi honestum esse, nisi mercede prius accepta arma pro patria non cepisse, neque patribus satis decorum, per metum potius quam postmodo voluntate adflictis civium suorum fortunis consuluisse. contioni deinde edicto addidit fidem, quo edixit, ne quis civem Romanum vinctum aut clausum teneret, quo minus ei nominis edendi apud consules potestas fieret, neu quis militis, donec in castris esset, bona possideret aut venderet, liberos nepotesve eius moraretur. hoc proposito edicto et qui aderant nexi profiteri extemplo nomina, et undique ex tota urbe proripientium se ex privato, cum retinendi ius creditori non esset, concursus in forum, ut sacramento dicerent, fieri.

Explain accurately the following words and phrases: *maxima quidem illa—laxamenti—contioni—fidem—nexi—possideret,* (mark the quantities,) *ut sacramento dicerent* (what case is *sacramento?*)

2. Cum iis circumire tribus, orare, ne pessimum facinus peiore exemplo admitterent iudices in suam rem litem vertendo, cum praesertim, etiam si fas sit curam emolumenti sui iudicibus esse, nequaquam tantum agro intercipiendo acquiratur, quantum amittatur alienandis iniuria sociorum animis. nam famae quidem ac fidei damna maiora esse, quam quae aestimari possent. hoc legatos referre domum, hoc vulgari; hoc socios audire, hoc hostes. quo cum dolore hos, quo cum gaudio illos! Scaptione hoc contionali seni adsignaturos putarent finitimos populos? clarum hac fore imagine Scaptium; sed populum Romanum quadruplatoris et interceptoris litis alienae personam laturum. quem enim hoc privatae rei iudicem fecisse, ut sibi controversiosam adiudicaret rem? Scaptium ipsum id quidem, etsi praemortui iam sit pudoris, non facturum.

(*a*) Explain accurately the following words and phrases: *litem vertendo—contionali seni—quadruplatoris—hac imagine.*

(*b*) Point out the changes of mood occasioned by the employment of the *oratio ŏbliqua.*

(*c*) Frame sentences to illustrate the different uses of *quin.*

III.—Translate into Latin prose :—

On the morning of the fifteenth, Galba was sacrificing before the Palatine temple of Apollo, when the aruspex informed him that the entrails were inauspicious, and portended a foe in his own household. Otho was standing by. He heard the words, and smiled at their import, which corresponded with his secret designs. Presently his freedman, Onomastus, announced that his architect awaited him at home. The signal was preconcerted: it implied that the soldiers were ready and the project ripe. He quitted the Emperor's presence in haste, alleging that the architect was come to inspect with him some new-purchased premises; leaning on his freedman's arm, with the air of a careless lounger, he descended through the house of Tiberius into the Velabrum, then turned to the right to the Golden Milestone beneath the Capitol in front of the Roman Forum. Here he was met by some common soldiers, three and twenty in number, who hailed him at once as imperator, thrust him into a litter, and, with drawn swords, bore him off, alarmed as he was at their fewness, across the Forum and the Saburra.

Appendix, No. 8.

Scholarship Examinations.

I.—-Translate :—

Anna, vides toto properari litore? Circum
Undique convenere; vocat iam carbasus auras,
Puppibus et laeti nautae imposuere coronas.
Hunc ego si potui tantum sperare dolorem,
Et perferre, soror, potero. Miserae hoc tamen unum
Exsequere, Anna, mihi-solam nam perfidus ille
Te colere, arcanos etiam tibi credere sensus;
Sola viri molles aditus et tempora noras-:
I, soror, atque hostem supplex affare superbum.
Non ego cum Danais Troianam exscindere gentem
Aulide iuravi, classemve ad Pergama misi,
Nec patris Anchisae cinerem Manesve revelli,
Cur mea dicta neget duras demittere in aures?
Quo ruit? Extremum hoc miserae det munus amanti:
Exspectet facilemque fugam ventosque ferentes.
Non iam coniugium antiquum, quod prodidit, oro,
Nec, pulchro ut Latio careat regnumque relinquat;
Tempus inane peto, requiem spatiumque furori,
Dum mea me victam doceat fortuna dolere.
Extremam hanc oro veniam-miserere sororis-;
Quam mihi quum dederis, cumulatam morte remittam.

In your translation of the line, *cur mea dicta*, etc., follow the reading of the text. Mention the various readings of the last line, stating which you prefer, and why.

II.—Translate and explain any illusion which may require elucidation:—

Regina in mediis patrio vocat agmina sistro,
Necdum etiam geminos a tergo respicit angues.
Omnigenûmque deûm monstra et latrator Anubis
Contra neptunum et Venerem contraque Minervam
Tela tenent. Saevit medio in certamine Mavors
Caelatus ferro, tristesque ex aethere Dirae;
Et scissa gaudens vadit Discordia palla,
Quam cum sanguineo sequitur Bellona flagello.
Actius haec cernens arcum intendebat Apollo
Desuper: omnis eo terrore Aegyptus et Indi,
Omnis Arabs, omnes vertebant terga Sabaei;
Ipsa videbatur ventis regina vocatis
Vela dare, et laxos iam iamque immittere funes.
Illam inter caedes pallentem morte futura
Fecerat ignipotens undis et Iapyge ferri;
Contra autem magno maerentem corpore Nilum,
Pandentemque sinus et tota veste vocantem
Caeruleum in gremium latebrosaque flumina victos.

Appendix,
No. 8.

Scholarship
Examinations.

III.—Translate:—

1. Auro repensus scilicet acrior
Miles redibit!—Flagitio additis
Damnum: neque amissos colores
Lana refert medicata fuco,

Nec vera virtus, cum semel excidit,
Curat reponi deterioribus.
Si pugnat extricata densis
Cerva plagis, erit ille fortis,

Qui perfidis se credidit hostibus,
Et Marte Poenos proteret altero,
Qui lora restrictis lacertis
Sensit iners timuitque mortem.

Hic, unde vitam sumeret inscius,
Pacem duello miscuit.—O pudor!
O magna Carthago, probrosis
Altior Italiae ruinis!

Give, with dates, the chief events of the first Punic War.

2. Quanto quisque sibi plura negaverit,
Ab dis plura feret: nil cupientium
Nudus castra peto et transfuga divitum
Partes linquere gestio,

Contemtae dominus splendidior rei,
Quam si, quidquid arat impiger Apulus,
Occultare meis dicerer horreis,
Magnas inter opes inops.

Purae rivus aquae silvaque iugerum
Paucorum et segetis certa fides meae
Fulgentem imperio fertilis Africae
Fallit sorte beatior.

(*a*) What is noteworthy in the scansion of the line *quam si quidquid,* etc., and in the quantities of Apulus and Apulia?

(*b*) Horace elsewhere gives the name of the *purae rivus aquae?* Explain accurately the construction and meaning of the last sentence.

3. Heu me, per Urbem—nam pudet tanti mali—
Fabula quanta fui! Conviviorum et poenitet,
In quis amantem languor et silentium
Arguit et latere petitus imo spiritus.
"Contrane lucrum nil valere candidum
Pauperis ingenium?" querebar applorans tibi,
Simul calentis inverecundus deus
Fervidiore mero arcana promorat loco.
"Quod si meis inaestuet praecordiis
Libera bilis, ut haec ingrata ventis dividat
Fomenta vulnus nil malum levantia,
Desinet imparibus certare summotus pudor."
Ubi haec severus te palam laudaveram,
Iussus abire domum, ferebar incerto pede
Ad non amicos heu mihi postes et heu
Limina dura, quibus lumbos et infregi latus.

HISTORY AND THE ENGLISH LANGUAGE.—*Examiner, Professor Yonge.*

Appendix, No. 8.

Scholarship Examinations.

QUESTIONS.

1. What was the nature of the claim which Stephen advanced to the Crown of England? And how did he proceed to prosecute it?

2. What were the circumstances of the quarrel of Philip Augustus of France with the Pope? And what was generally the view taken of the Pope's authority by the French Kings in the middle ages?

3. What were the chief provisions of Magna Charta? How far did it introduce new principles of government? And what respect was paid it during the first two centuries after its enactment?

4. Give a sketch of Simon de Montfort's career.

5. Discuss the claim of Edward III. to the Throne of France.

6. Give some account of the Jacquerie, and of the League for the Public Good in France.

7. What was the Constitution of the States General, and of the Parliament in France?

8. What was the general character of the Government of Richard III.

SUBJECT FOR ESSAY.

THE INFLUENCE OF THE CRUSADES ON CIVILIZATION.

SECOND YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

I.—Translate the following extract from the *Phaedon* of PLATON :—

οἳ δ' ἂν ἰάσιμα μὲν μεγάλα δὲ δόξωσιν ἡμαρτηκέναι ἁμαρτήματα, οἷον πρὸς πατέρα ἢ μητέρα ὑπ' ὀργῆς βίαιόν τι πράξαντες, καί, μεταμέλον αὐτοῖς, τὸν ἄλλον βίον βιῶσιν ἢ ἀνδροφόνοι τοιούτῳ τινὶ ἄλλῳ τρόπῳ γένωνται, τούτους δὴ ἐμπεσεῖν μὲν εἰς τὸν Τάρταρον ἀνάγκη, ἐμπεσόντας δὲ αὐτοὺς καὶ ἐνιαυτὸν ἐκεῖ γενομένους ἐκβάλλει τὸ κῦμα, τοὺς μὲν ἀνδροφόνους κατὰ τὸν Κωκυτὸν τοὺς δὲ πατραλοίας καὶ μητραλοίας κατὰ τὸν Πυριφλεγέθοντα· ἐπειδὰν δὲ φερόμενοι γένωνται κατὰ τὴν λίμνην τὴν Ἀχερουσιάδα, ἐνταῦθα βοῶσί τε καὶ καλοῦσιν, οἱ μὲν οὓς ἀπέκτειναν, οἱ δὲ οὓς ὕβρισαν, καλέσαντες δ' ἱκετεύουσι καὶ δέονται ἐᾶσαι σφᾶς ἐκβῆναι εἰς τὴν λίμνην καὶ δέξασθαι, καί, ἐὰν μὲν πείσωσιν, ἐκβαίνουσί τε καὶ λήγουσι τῶν κακῶν, εἰ δὲ μή, φέρονται αὖθις εἰς τὸν Τάρταρον κἀκεῖθεν πάλιν εἰς τοὺς ποταμούς· καὶ ταῦτα πάσχοντες οὐ πρότερον παύονται, πρὶν ἂν πείσωσιν οὓς ἠδίκησαν· αὕτη γὰρ ἡ δίκη ὑπὸ τῶν δικαστῶν αὐτοῖς ἐτάχθη.

II.—Translate the following story from the *Fabulae Aesopicae* :—

ἰατρὸς ἦν ἄτεχνος καὶ κομψολόγος. οὗτος ἀῤῥώστῳ παρακολουθῶν, πάντων ἰατρῶν λεγόντων αὐτὸν χρονίσειν ἐν τῇ νόσῳ, μόνος ἔφη αὐτῷ πάντα τὰ αὑτοῦ ἑτοιμάσαι, τὴν αὔριον γὰρ οὐχ ὑπερβήσειν. ταῦτα εἰπὼν ὑπεχώρησε. μετὰ χρόνον δέ τινα ἀναστὰς ὁ νοσῶν προῆλθεν ὠχρὸς καὶ μόλις ζῶν. ὁ δὲ ἰατρὸς ἐκεῖνος συναντήσας αὐτῷ "χαῖρε!" ἔφη· "πῶς ἔχουσιν οἱ κάτω;" κἀκεῖνος εἶπεν· "ἠρεμοῦσι πιόντες τὸ τῆς λήθης ὕδωρ. πρὸ ὀλίγου δὲ ὁ Θάνατος καὶ ὁ Ἅιδης δεινὰ ἠπείλουν πρὸς τοὺς ἰατροὺς πάντας, ὅτι τοὺς νοσοῦντας οὐκ ἐῶσιν ἀποθνήσκειν, καὶ κατεγράφοντο πάντας. ἔμελλον δὲ καὶ σὲ γράψασθαι, ἀλλ' ἐγὼ προπεσὼν δυσωπήσας ἐξωμοσάμην αὐτοῖς μὴ ἀληθῆ ἰατρὸν εἶναί σε ἀλλὰ μάτην διαβληθῆναι.

Point out several word-forms in this passage which deviate from the Attic standard.

Appendix, No. 8.

Scholarship Examinations.

III.—Translate in Attic prose the following passage:—

Qui in summo malo est, is tum, quum in eo est, non est beatus: sapiens autem semper beatus est et est aliquando in dolore: non est igitur summum malum dolor. iam illud quale tandem est, bona praeterita non effluere sapienti, mala meminisse non oportere? primum in nostrane potestate est quid meminerimus? Themistocles quidem, quum ei Simonides artem memoriae polliceretur: "oblivionis" inquit "mallem. nam memini etiam quae nolo: oblivisci non possum quae volo." . . . . . quid? si etiam iucunda memoria est praeteritorum malorum? ut proverbia non nulla veriora sint quam vestra dogmata. vulgo enim dicitur: "iucundi acti labores."

I.—Translate the following from the *Rhesos* ascribed to **Euripides**:—

ΧΟΡΟΣ. τί ποτ' εὐτυχίας ἐκ τῆς μεγάλης
Τροίαν ἀνάγει πάλιν ἐς πένθη
δαίμων ἀεί τι φυτεύων;
ἔα ἔα!
τίς ὑπὲρ κεφαλῆς θεός, ὦ βασιλεῦ!
τὸν νεοθνῆ[2] τονδ' ἤδη χειροῖν
φοράδην[2] πέμπει;
ταρβῶ λεύσσων τόδε σῆμα.
ΜΟΥΣΑ. ὁρᾶν πάρεστι, Τρῶες! ἡ γὰρ ἐν σοφοῖς
τιμὰς ἔχουσα Μοῦσα συγγόνων μία
πάρειμι[2] παῖδα τόνδ' ὁρῶσ' οἰκτρῶς φίλον
θανόνθ' ὑπ' ἐχθρῶν· ὅν ποθ' ὁ κτείνας χρόνῳ
δόλιος Ὀδυσσεὺς ἀξίαν τίσει δίκην.
ἰαλέμῳ[2] αὐθιγενεῖ,[3] τέκνον, σ' ὀλοφύρομαι, ὦ
ματρὸς ἄλγος! οἵαν[3] ἔκελσας[1] ὁδὸν ποτὶ[1] Τροίαν—
ἦ δυσδαίμονα καὶ μελέαν—
ἀπὸ[1] μὲν φαμένας[1] ἐμοῦ πορευθεὶς
ἀπὸ δ' ἀντομένου πατρὸς βιαίως.[3]
ὤμοι ἐγὼ σέθεν![3] ὦ φιλία φιλία κεφαλά! τέκνον ὤμοι!
ΧΟΡΟΣ. ὅσον προσήκει μὴ[3] γένους κοινωνίαν
ἔχοντι,[2] κἀγὼ τὸν σὸν οἰκτείρω γόνον.
ΜΟΥΣΑ. ὄλοιτο μὲν Οἰνεΐδας,[2] ὄλοιτο δὲ Λαρτιάδας,[2]
ὅς μ' ἄπαιδα γέννας[3] ἔθηκεν ἀριστοτόκοιο,[2]
ἅ θ' Ἕλλανα[1] λιποῦσα δόμον
Φρυγίων λεχέων[3] ἔπλευσε πλαθεῖσ',[1]
ὑπό τ' Ἰλίου ὤλεσέν σε πύργοις,
φίλτατε! Τρωιάδας τε πόλεις ἀνδρῶν[3] ἀγαθῶν ἐκένωσεν.

II.—1. Parse the words to which the figure 1 is attached.

2. Derive or decompound the words to which the figure 2 is attached.

3. Explain the syntax of the words or clauses to which the figure 3 is attached.

Latin.—*Examiner, Professor William Nesbitt,* M.A.

I.—Translate:—

1. Ac ne illud quidem vobis negligendum est, quod mihi ego extremum proposueram, quum essem de belli genere dicturus, quod ad multorum bona civium Romanorum pertinet, quorum vobis pro vestra sapientia, Quirites, habenda est ratio diligenter. Nam et publicani, homines honestissimi atque ornatissimi, suas rationes et copias in illam provinciam contulerunt, quorum ipsorum per se res et fortunae vobis curae esse debent.

Etenim si vectigalia nervos esse rei publicae semper duximus, eum certo ordinem, qui exercet illa, firmamentum caeterorum ordinum recte esse dicemus.

Appendix, No. 8.

Scholarship Examinations.

Whence is the name *publicanus* derived? Mention the sources of Roman revenue, and describe the mode of its collection. Account for the eagerness with which the presidency of the *publica judicia* was contested.

3. Nos, quorum maiores Antiochum regem classe Persemque superarunt, omnibusque navalibus pugnis Karthaginienses, homines in maritimis rebus exercitatissimos paratissimosque, vicerunt, ii nullo in loco iam praedonibus pares esse poteramus: nos, qui antea non modo Italiam tutam habebamus, sed omnes socios in ultimis oris auctoritate nostri imperii salvos praestare poteramus, tum, quum insula Delos, tam procul a nobis in Aegaeo mari posita, quo omnes undique cum mercibus atque oneribus commeabant, referta divitiis, parva, sine muro, nihil timebat, iidem non modo provinciis atque oris Italiae maritimis ac portubus nostris, sed etiam Appia iam via carebamus: et iis temporibus non pudebat magistratus populi Romani in hunc ipsum locum escendere, quum eum nobis maiores nostri exuviis nauticis et classium spoliis ornatum reliquissent.

What was the origin of the war with Macedonia? Give the dates and circumstances of the battles of Cynoscephalæ, Pydna, and Magnesia. Under what circumstances was Pompey appointed to the command of the war against the Pirates?

II.—Translate:—

1. Dilectu perfecto consules paucos morati dies, dum socii ab nomine Latino venirent. milites tum, quod numquam antea factum erat, iure iurando ab tribunis militum adacti, [iussu consulis conventuros neque iniussu abituros.] nam ad eam diem nihil praeter sacramentum fuerat; et ubi ad decuriatum aut centuriatum convenissent, sua voluntate ipsi inter sese decuriati equites centuriati pedites coniurabant, sese fugae atque formidinis ergo non abituros, neque ex ordine recessuros nisi teli sumendi aut petendi et aut hostis feriendi aut civis servandi causa. id ex voluntario inter ipsos foedere ad tribunos, ad legitimam iuris iurandi adactionem translatum.

Explain the innovation in the form of administering the military oath. What is the objection to the reading *ad decuriatum aut centuriatum?* Give Madvig's emendation.

2. Inde rursus sollicitari seditione militari ac discordia consulum Romana castra, cum Paulus Semproniique et Flaminii temeritatem Varroni, Varro speciosum timidis ac segnibus ducibus exemplum Fabium obiceret, testareturque deos hominesque hic, nullam penes se culpam esse, quod Hannibal iam vel usu cepisset Italiam; se constrictum a collega teneri; ferrum atque arma iratis et pugnare cupientibus adimi militibus: ille, si quid proiectis ac proditis ad inconsultam atque improvidam pugnam legionibus accideret, se omnis culpae exsortem omnis eventus participem fore diceret. videret ut, quibus lingua prompta ac temeraria, aeque in pugna vigerent manus.

Write a note on *vel usu.*

3. Spoliis ad multum dici lectis Hannibal ad minora ducit castra oppugnanda, et omnium primum brachio obiecto flumine eos excludit. ceterum ab omnibus labore vigiliis vulneribus etiam fessis maturior ipsius spe deditio est facta. pacti, ut arma atque equos traderent, in capita Romana trecenis nummis quadrigatis, in socios ducenis, in servos centenis, et ut eo pretio persoluto cum singulis abirent vestimentis, in castra hostis acceperunt; traditique in custodiam omnes sunt, seorsum cives sociique.

What is the coin designated by the name *nummi quadrigati?* Explain how it had become current in Southern Italy.

4. Give the dates and chief events of the second Punic war.

Appendix, No. 8.

Scholarship Examinations.

III. Translate into Latin prose:—

While the legionaries were busily employed on their works, the train of baggage began to gain the summit of the hill. This was the appointed signal of the Nervii to burst from their concealment in the woods. Long had they waited for it, and great had been their disappointment as they saw legion after legion take up their ground before its arrival. But when they beheld the whole Roman army standing before them they were not dismayed; they trusted in the suddenness of their appearance and the impetuosity of their charge. Cæsar was taken by surprise; it was impossible to issue at once all the orders requisite for the disposition of his numerous forces. But the admirable training of the legionaries supplied for the moment the place of generalship. Though many had not time to seize their helmets, or draw off the leathern coverings from their shields, though some of the standards were yet furled, and the hedges with which the country had been obstructed prevented some divisions from seeing the movements of the others, yet in a few minutes the whole scattered multitude was disposed in the intricate order of Roman battle-array.

I.—Translate:—

1. Sa. Quid? si ego tibi illam nolo uendere,
Coges me? Ae. Minume. Sa. Namque id metui. Ae. Neque uendundam censeo,
Quae liberast: nam ego liberali illam adsero causa manu.
Nunc uide utrum uis: argentum accipere an causam meditari tuam.
Delibera hoc, dum ego redeo, leno. Sa. Pro supreme Iuppiter,
Minume miror qui insanire occipiunt ex iniuria.
Domo me eripuit, uerberauit: me inuito abduxit meam:
Homini misero plus quingentos colaphos infregit mihi.
Ob malefacta haec tantidem emptam postulat sibi tradier.
Verum enim quando bene promeruit, fiat: suom ius postulat.
Age iam cupio, modo si argentum reddat. sed ego hoc hariolor:
Vbi me dixero dare tanti, testis faciet ilico,
Vendidisse me, de argento somnium: 'mox: cras redi.'

2. Ch. At uereor ut placari possit. De. Bono animo es:
Ego redigam uos in gratiam, hoc fretus, Chremes,
Quom e medio excessit unde haec susceptast tibi.
Ph. Itane agitis mecum? satis astute adgredimini.
Non hercle ex re istius me instigasti, Demipho.
Ain tu? ubi quae lubitum fuerit peregre feceris
Neque huius sis ueritus feminae primariae,
Quin nouo modo ei faceres contumeliam,
Venias nunc precibus lautum peccatum tuom?
Hisce ego illam dictis ita tibi incensam dabo,
Vt ne restinguas, lacrumis si extillaueris.
De. [Malum quod isti di deaeque omnes duint.]
Tantane adfectum quemquam esse hominem audacia?
Non hoc publicitus scelus hinc asportarier
In solas terras?

3. Exequias Chremeti quibus est commodum ire, em tempus est.
Sic dabo: age nunc, Phormionem qui uolet lacessito:
Faxo tali eum mactatum atque hic est infortunio.
Redeat sane in gratiam: iam supplici satis est mihi.
Habet haec ei quod, dum uiuat, usque ad aurem ogganniat.

4. De. Ego, Nausistrata, esse in hac re culpam meritum non nego:
Sed ea quin sit ignoscenda. Ph. Verba fiunt mortuo.

Appendix, No. 8.

Scholarship Examinations.

Scan the eighth and tenth lines of the second extract, and the first of the third. Explain and illustrate the use that has been made of the phenomena of the Neo-Latin languages in elucidating the metrical licences of Roman Comedy.

II.—Translate:—

Idibus in magni castus Jovis aede sacerdos
  Semimaris flammis viscera libat ovis:
Redditaque est omnis populo provincia nostro;
  Et tuus Augusto nomine dictus avus.
Perlege dispositas generosa per atria ceras;
  Contigerunt nulli nomina tanta viro.
Africa victorem de se vocat: alter Isauras,
  Aut Cretum domitas testificatur opes.
Hunc Numidae faciunt, illum Messana superbum;
  Ille Numantina traxit ab urbe notam.
Et mortem et nomen Druso Germania fecit.
  Me miserum, virtus quam brevis illa fuit!
Si petat a victis, tot sumat nomina Caesar,
  Quot numero gentes maximus orbis habet.
Ex uno quidam celebres, aut torquis ademtae,
  Aut corvi titulos auxiliaris habent.
Magne, tuum nomen rerum mensura tuarum est:
  Sed qui te vicit, nomine major erat.
Nec gradus est ultra Fabios cognominis ullus:
  Illa domus meritis Maxima dicta suis.
Sed tamen humanis celebrantur honoribus omnes:
  Hic socium summo cum Jove nomen habet.
Sancta vocant augusta Patres: augusta vocantur
  Templa, sacerdotum rite dicata manu.
Hujus et augurium dependet origine verbi,
  Et quodcumque sua Jupiter auget ope.
Augeat imperium nostri Ducis, augeat annos:
  Protegat et vestras querna corona fores.

(*a*) Explain, with dates, the historical allusions.
(*b*) Write brief notes on *tuus avus—ceras—querna corona.*

III.—Translate:—

O mihi post nullos, Iuli, memorande sodales,
  Si quid longa fides canaque iura, valent,
Bis iam paene tibi consul tricesimus instat,
  Et numerat paucos vix tua vita dies.
Non bene distuleris videas quod posse negari,
  Et solum hoc ducas, quod fuit, esse tuum.
Expectant curaeque catenatique labores,
  Gaudia non remanent, sed fugitiva volant.
Haec utraque manu complexuque assere toto:
  Saepe fluent imo sic quoque lapsa sinu.
Non est, crede mihi, sapientis dicere, "Vivam:"
  Sera nimis vita est crastina: vive hodie.

IV.—Translate into Latin verse:—

For we were nurst upon the self-same hill,
Fed the same flocks by fountain, shade, and rill,
Together both, ere the high lawns appeared
  Under the opening eyelids of the Morn,
We drove a-field, and both together heard
  What time the gray-fly winds her sultry horn,

Appendix, No. 8.

Scholarship Examinations.

Battening our flocks with the fresh dews of night,
Oft till the star that rose at evening bright,
Towards heaven's descent had sloped his westering wheel.
Meanwhile the rural ditties were not mute,
Tempered to the oaten flute;
Rough satyrs danced, and Fauns with cloven heel
From the glad sound would not be absent long,
And old Damætas loved to hear our song.

THE ENGLISH LANGUAGE.—*Examiner, Professor Yonge.*

QUESTIONS.

1. Dr. Latham asserts that "the English Language came from Germany." Under what circumstances did it do so; from what part of Germany; and to what extent is the observation true; or how far does it require qualification?

2. Trace the gradual progress of the English Language to its present form. Who may most correctly be regarded as the earliest writer of modern English?

3. In considering the *derivation* of words, name as many as you can of the principal classes of derivations.

4. In the matter of gender, number, case, person, and degree, how far do the English nouns and verbs resemble, and how far do they differ from other languages, ancient or modern?

5. Into how many classes would you divide prose authors? What do you consider the chief and special qualities to be aimed at in each style of composition? Illustrate your explanation as far as you can by quotations or references.

6. Has the English Language been at all changed in its usages or modes of expression in the last two centuries? Is there any appearance of such change at the present time, and if so, what is the general character of such change?

7. Give an analysis of any work of either Addison (any series of papers in the *Spectator*), or Burke, or Macaulay (any one of his Essays), with which you are acquainted.

Subject for Essay: "TASTE."

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FRENCH.

Translate into French:—

Fear is in almost all cases a wretched instrument of government, and ought in particular never to be employed against any order of men who have the smallest pretensions to independency. The attempt to terrify them, serves only to irritate their bad humour and to confirm them in an opposition, which more gentle usage, perhaps, might easily induce them either to soften, or to lay aside altogether. The violence which the French Government usually employed in order to oblige all their parliaments, or sovereign courts of justice, to enregister any popular edict, very seldom succeeded. The means commonly employed, however, the imprisonment of all the refractory members, were forcible enough. The princes of the house of Stuart sometimes employed the like means in order to influence some of the members of the parliament of England, and they generally found them equally intractable.—ADAM SMITH.

Translate into English:—

1. Malgré cette défaite, les faubourgs ne se tinrent pas pour battus, et le lendemain ils s'avancèrent en masse avec leurs canons contre la conven-

Appendix, No. 8. Scholarship Examinations.

tion. Les sectionnaires de leur côté se rendirent auprès d'elle pour la défendre. Les deux partis étaient prêts à en venir aux mains; les canons des faubourgs qui avaient débouché sur le Caroussel, étaient déjà braqués contre le château, lorsque l'assemblée envoya des commissaires auprès des insurgés. Les négociations s'entamèrent; un député des faubourgs, admis devant l'assemblée, demanda d'abord ce qu'on avait demandé la veille, ajoutant: "Nous sommes décidés à mourir au poste que nous occupons, plutôt que de rien relâcher de nos demandes. Je ne crains rien, je me nomme Saint-Légier. Vive la république! Vive la convention, si elle est amie des principes, comme je le crois!" On accueillit favorablement le député, et l'on fraternisa avec les faubourgs, sans toutefois leur rien accorder de positif. Ceux-ci n'ayant plus un conseil-général de la commune pour soutenir leurs résolutions, ni un commandant comme Henriot pour les tenir campés jusqu'au moment où leurs propositions seraient décrétées, n'allérent pas plus avant.—MIGNET.

2. LE CYGNE ET LE CUISINIER.

Dans une ménagerie
De volatiles remplie
Vivaient le cygne et l'oison:
Celui-là destiné pour les regards du maître;
Celui-ci pour son goût: l'autre qui se piquait d'être
Commensal du jardin; l'autre de la maison.
Des fossés du château faisant leurs galeries,
Tantôt on les eût vus côte à côte nager,
Tantôt courir sur l'onde, et tantôt se plonger
Sans pouvoir satisfaire à leurs vaines envies.
Un jour le cuisinier, ayant trop bu d'un coup,
Prit pour oison le cygne, et, le tenant au cou,
Il allait l'égorger, puis le mettre en potage.
L'oiseau, prêt à mourir, se plaint en son ramage.
Le cuisinier fut fort surpris,
Et vit bien qu'il s'était mépris.
Quoi! je mettrais dit-il, un tel chanteur en soupe!
Non, non, ne plaise aux dieux que jamais ma main coupe
La gorge à qui s'en sert si bien!

LAFONTAINE.

GERMAN.

I.—Translate into German:—

1. Do you know the name of the author? Man has two ears and one mouth. The kingdom of Prussia has six universities. Have you been in Switzerland? Except my sisters nobody was at home. I walked along the river as far as the wood. The troops advanced against the enemy. Write distinctly. You must speak louder. He ought to have done it. He has been obliged to do it.

2. It is now little more than a century since the English first began to establish themselves in any force upon the peninsula of India; and we at present possess, in that country, a more extensive territory and a more numerous population than any European power can boast of at home. In no instance has the genius of the English and their courage, shone forth more conspicuously than in their contest with the French for the empire of India. The numbers on both sides were always inconsiderable; but the two nations were fairly matched against each other, in the cabinet and the field.

Appendix, No. 8.

Scholarship Examinations.

II.—Translate into English:—

1. Ich hatte durch menſchenleere Straßen einen Weg nach meinem Hauſe eingeſchlagen. Als ich davor ſtand und es anſah, konnte ich es kaum erkennen: hinter den eingeſchlagenen Fenſtern brannte kein Licht. Die Thüren waren zu, kein Dienervolk regte ſich mehr darin. Er lachte laut auf neben mir: „Ja, ja, ſo geht's! Aber Ihren Bendel finden Sie wohl daheim, den hat man jüngſt vorſorglich ſo müde nach Hauſe geſchickt, daß er es wohl ſeitdem gehütet haben wird.“ Er lachte wieder "Der wird Geſchichten zu erzählen haben!—Wohlan denn! für heute gute Nacht, auf baldiges Wiederſehen!“

Ich hatte wiederholt geklingelt, es erſchien Licht; Bendel frug von Innen, wer geklingelt habe. Als der gute Mann meine Stimme erkannte, konnte er ſeine Freude kaum bändigen; die Thür flog' auf, wir lagen weinend einander in den Armen. Ich fand ihn ſehr verändert, ſchwach und krank; mir war aber das Haar ganz grau geworden.—Chamiſſo.

2. Und nun rauſchen die Paniere
Stärker; durch das offne Fenſter
Weht ein Wind her von den Höhen—
Plötzlich ſchweigen Wind und Fahnen
Edel: denn der Cid entſchläft.
Auf, nun auf! Trommeten, Trommeln,
Pfeifen, Klarinetten tönet,
Uebertönet Klag' und Seufzer;
Denn der Cid befahl es da.
Ihr geleitet auf die Seele
Eines Helden der entſchlief.

Herder.

SCIENCE SCHOLARSHIPS.—FIRST YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ALGEBRA AND ARITHMETIC.

1. An income tax collector is paid by a commission on all the money paid into his office. A new administration adds 3*d*. in the £1 to the tax, and he finds his own emoluments, after paying his own income tax, increased by the change in the ratio of 231 : 156; find at what the income tax stood before the change.

2. The time a crew takes to pull up a given reach of a river and back, is to the time they would take to row the same distance in still water as 4 : 3. The river flows at three miles an hour. Find the rate at which they row.

3. Calculate to two places of decimals

$$\frac{(2+\sqrt{3})^{\frac{1}{2}}+(2-\sqrt{3})^{\frac{1}{2}}}{(2+\sqrt{3})^{\frac{1}{2}}-(2-\sqrt{3})^{\frac{1}{2}}}$$

4. Show that if $x^2+y^2=a^2$ $u^2+v^2=b^2$ $xu+yv=ab$ then $\frac{x}{y}=\frac{u}{v}$.

5. Solve the equation

$$\sqrt{\frac{a-x}{b-x}}-\sqrt{\frac{b-x}{a-x}}=c$$

6. Solve

$$\sqrt{x+\sqrt{x}}+\sqrt{x-\sqrt{x}}=a.$$

$$(x+5)^{\frac{1}{3}}-(x-4)^{\frac{1}{3}}=3.$$

Appendix, *No. 8.*

Scholarship Examinations.

7. Show that if $(x+y+z)\left(\frac{1}{x}+\frac{1}{y}+\frac{1}{z}\right)=1$ the sum of two of the quantities x, y, z must be equal to zero.

8. Given $x^5+y^5=275$ $x+y=5$ find x and y.

9. If $\sin\theta=2\sqrt{\sin\alpha-\sin^2\alpha}$ find $\cos\frac{\theta}{2}$.

10. Express xyz in terms of α, β, γ, where $\alpha=x+y+z$, $\beta=x^2+y^2+z^2$, $\gamma=x^3+y^3+z^3$.

GEOMETRY AND TRIGONOMETRY.

1. Similar triangles aro to each other in the duplicate ratio of their homologous sides.

2. Find the locus of a point such that tho square of its distance from a fixed point varies as its distance from a fixed line.

3. Determine a point such that the triangles formed by joining it to the extremities of two given lines shall be similar.

4. A variable circle passes through the vertex (O) of a given angle meeting its sides again in X and Y. Show that if $OX+OY$ is constant the circle passes through a fixed point.

5. Find sin 18° and sin 9°

6. In a triangle (ABC) express $\tan A$ in terms of a, b, and C.

7. Express in a form adapted to logarithmic compntations, the bisector of one of the angles of a triangle in terms of the sides.

8. Reduce to their simplest form the values of x which satisfy the equation

$$x^2-\frac{2x}{\sin 2\theta}+1=0$$

9. Given $\frac{\cos\theta+\sin\theta}{\cos\theta-\sin\theta}=\sqrt{3}$ Find θ.

10. Prove the formulae:

$$\frac{\tan\frac{1}{2}(A-B)}{\tan\frac{1}{2}(A+B)}=\frac{a-b}{a+b} \qquad \sin\tfrac{1}{2}A=\sqrt{\frac{(s-b)(s-c)}{bc}}$$

11. Given a and b the two sides of a triangle. Given also that the area $=k^2$, show that the third side has two possible values and that their product $=\sqrt{k^4+(a^2-b^2)^2}$.

12. If a quadrilateral whose sides are $a\ b\ c\ d$ is inscribable in a semicircle of which one of the sides d is a diametor, prove the following relation

$$d^3-d(a^2+b^2+c^2)-2abc=0$$

SECOND YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

1. Eliminate x from the equations

$$\begin{cases} ax^m+bx^n+c=0 \\ a'x^m+b'x^n+c'=0 \end{cases}$$

2. Clear of radicals each of the equations

$$x^{\frac{1}{3}}+y^{\frac{1}{3}}+z^{\frac{1}{3}}=0$$
$$x^{\frac{1}{4}}+y^{\frac{1}{4}}+z^{\frac{1}{4}}=0$$

Appendix, No. 3.

Scholarship Examinations.

3. If $\phi(xy)=\phi(x)+\phi(y)$, whatever values we assign to x and y, show that $\phi(x)$ must denote $\log_a(x)$ where a is some arbitrary constant.

4. If α and β be the roots of the equation $x^2-px-q=0$ prove that

$$\log\left(1-\frac{p}{x}-\frac{q}{x^2}\right)=-\left\{\frac{\alpha+\beta}{x}+\frac{\alpha^2+\beta^2}{2x^2}+\frac{\alpha^3+\beta^3}{3x^3}+\text{\&c.}\right.$$

Hence express $\alpha^m+\beta^m$ in terms of p and q, and $\cos m\theta$ in terms of $\cos\theta$.

5. A. B. possesses an annuity of £a per annum to expire in n years, and wishes to convert it into another annuity lasting for the same time but such that every year he shall receive m times as much as in the year preceding. At what sum ought the new annuity to commence, interest of money being r per cent.?

6. Prove that if δ be the distance between the centre of the circle inscribed in a triangle and the intersection of perpendiculars let fall on the sides from the vertices

$$\delta^2=4R^2\left\{8\sin^2\frac{A}{2}\sin^2\frac{B}{2}\sin^2\frac{C}{2}-\cos A\cos B\cos C\right\}$$

7. A quadrilateral is inscribable in a circle, express the angle at which the diagonals intersect in terms of the sides.

8. Prove Wallis' theorem

$$\frac{\pi}{2}=\text{limit of }\frac{2.2.4.4.6.6......}{1.3.3.5.5.7......}$$

9. Investigate the conditions that $ax^2+by^2+cz^2+2lyz+2mzx+2nxy$ should be a perfect square.

CONIC SECTIONS.

The Propositions to be proved geometrically.

1. A variable tangent to an ellipse intersects two fixed tangents; prove that the segment cut off on the variable tangent subtends a constant angle at the focus.

2. Investigate the length of the chord of curvature at any point of a central conic drawn in any direction.

3. Prove that if a right cone be cut by a plane parallel to one of the sides of the cone the section is a parabola.

CO-ORDINATE GEOMETRY.

1. Determine the co-ordinates of the point dividing the line joining the points $x'y'$ $x''y''$ internally or externally in the ratio $m:n$.

2. The line $3x+5y=7$ cuts off a triangle from the co-ordinate axes [supposed rectangular.] Determine

(1) The co-ordinates of the foot of the perpendicular let fall on this line from the origin;

(2) The co-ordinates of the centre of the circle inscribed in the triangle.

3. Prove the expression for the area of a triangle in terms of the co-ordinates of its vertices.

4. Investigate the equation of the pair of tangents from any point to the circle $x^2+y^2=r^2$.

5. Find by co-ordinate geometry the complete locus of a point at which the sides of an isosceles triangle subtend equal angles.

6. Taking as axes the two sides of a triangle, investigate the equation of the circle through the middle points of its sides.

Appendix, No. 8.

Scholarship Examinations.

DIFFERENTIAL CALCULUS.

1. Define a differential co-efficient, and in accordance with your definition determine the differential co-efficients of $\cos x$ and $x^{\frac{1}{2}}$.

2. Differentiate

$$\frac{2a+bx}{\sqrt{a+bx^2}} \qquad \sin^{-1}\frac{2x+1}{\sqrt{5}} \qquad x\tan^{-1}x-\log\sqrt{1+x^2}$$

3. Find the direction of the tangent to the curve $y=\sqrt{3+2x+x^2}$ at the point where it cuts the axis of x.

4. Given $y=\log\left\{\frac{\sqrt{1+x^2}+x}{\sqrt{1+x^2}+x}\right\}^{\frac{1}{2}}$ find $\frac{dy}{dx}$

ENGINEERING SCHOLARSHIPS.—SECOND YEAR STUDENTS.

EXPERIMENTAL PHYSICS.—*Examiner, Professor Everett.*

1. Explain the production of beats by two notes which are nearly in unison.

2. Describe the mode of operating to produce overtones from the monochord. In what manner is the string vibrating in the production of these notes?

3. How is the velocity of sound in air affected by temperature and barometric pressure? In what ratio would the velocity be changed by the substitution of another gas for air?

4. What are the laws of capillary action as regards the elevation of a liquid in small tubes, and between parallel plates?

5. Explain briefly the difference between the Wheatstone and Morse telegraphs.

6. Describe Arago's rotations, and give Faraday's explanation.

7. Describe the Newtonian, Herschelian, and Gregorian telescopes, and give a formula for the magnifying power of the two former. What is the precise meaning of the "magnifying power" of a telescope?

8. Define the thermal conductivity of a substance, and show that it is not correctly measured by the quickness with which when one end of a bar is heated the other end rises in temperature.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. How is the amount of the latent heat of a vapour determined?

2. How is the spectrum of such a metal as iron observed, and in what way is the identity of its bright lines with certain dark ones in the solar spectrum established?

3. Describe in detail the synthesis of water by means of hydrogen and oxide of copper.

4. In what proportions are gases known to combine?

5. Describe the three varieties of phosphoric acid.

6. State, in symbols, the reaction when fluoride of silicon is passed into water.

7. Give an account of the hydrocyanic acid, and describe its tests.

8. How is sodium prepared, and what are its chief properties?

9. What are the tests for lime and magnesia?

10. Give an account of the compounds of lead and oxygen, and mention the characteristic tests for lead.

Appendix, No. 8.

Scholarship Examinations.

11. How is the arsenic acid prepared, and what are its properties?

12. Give an account of the alloys of tin and copper with one another.

13. How would you determine the composition of an old mortar?

14. What gases are produced in the explosion of gunpowder, and how may the force produced by the explosion be appropriately calculated?

15. Give an account of Bessemer's process for manufacturing steel directly from cast-iron.

16. What is the difference in composition between flint-glass and crown-glass?

17. Describe generally the derived ammonias, and illustrate your statement by examples.

GEOMETRICAL DRAWING.—*Examiner, Professor James Thomson.*

1. In the accompanying diagram sheet A, in which $x\,y$ is the intersection of the two planes of projection, a red plane and a blue plane are shown by their traces in their respective colours. It is required to find, by accurate construction on the given sheet, the projections of the line of intersection of the two planes. You are also to give brief written explanations of your construction.

2. Work out the same problem as in the foregoing question, using, instead of the data given on sheet A, those given on sheet B, doing this, if you can, by two methods; first, by assuming an auxiliary plane, perpendicular to both planes of projection; and, secondly by assuming an auxiliary plane parallel to the vertical plane of projection. The results should agree in both cases. Credit will, however, be given you for any one or two good solutions you may give, even if you do not follow the methods here suggested.

3. Given a curve (not necessarily a plane curve) by its projections on a horizontal and a vertical plane, to find its projection on a third plane at right angles to both of these.

4. To describe, as an approximate ellipse, an oval having its circumference made up of circular arcs. You may recollect that two methods for this are taught in the Engineer's Drawing Book, and you should show both if you can.

5. Supposing a rectangular parallelepiped to be so placed, relatively to a plane of projection, that its ordinary projection (projected by lines perpendicular to the plane of projection), shall be isometric; show how to find, by geometric construction, the angle which any edge of it makes with the plane of projection, and the angle which any face of it makes with the plane of projection.

6. In the drawing of shadows, supposing the light to fall so that the vertical and the horizontal projections of a ray make each an angle of 45° with the "*ground line*," construct the angle which the light makes with either plane of projection.

7. What is meant by the statements—1st, that the perspective of an original straight line, indefinite as to length, is in the straight line which passes through the vanishing point and the intersecting point of the original straight line; and 2nd, that it cannot extend in the direction from the intersecting point past the vanishing point, but that it may extend past the intersecting point from the vanishing point?

8. If a row of vertical round columns equal to one another in diameter be correctly drawn in perspective on a picture surface taken parallel to the vertical plane which passes through the axes of all the columns, the breadths of the representations of the columns will be unequal one to another. Explain why.

9. To form on a picture surface, indefinite in extent, strictly correct

Appendix, No. 8.

Scholarship Examinations.

perspective representations of spheres in whole or in part, according as the picture surface can receive the whole representation or only a part, what curves must be drawn, and why?

10. In the accompanying diagram sheet let $x\ y$ be the intersection of the vertical and horizontal planes of projection; E and E′ the horizontal and vertical projections of the eye-point, or point of view; and AB the horizontal projection of a vertical picture surface. Draw on some convenient part of the sheet the perspective representation on the given picture surface of the house shown in outlines by plan and elevations (that is to say, by horizontal and vertical projections); and explain your work.

11. Assume a "ground line" or intersection of two planes of projection across the middle of your sheet of paper. With a radius of $\frac{3}{4}$ of an inch describe a circle with its centre two inches below the ground line. Inscribe in the circle a regular hexagon having two sides parallel to the ground line. Take this hexagon as the base of a vertical six-sided prism half an inch in height, with a regular six-sided pyramid standing on the top of the prism as base, and having its height one inch. Draw the horizontal and vertical projections of the object so made up, and draw its shadow cast on the horizontal plane of projection. Also distinguish between the illuminated faces of the pyramid and those turned away from the light. In this you are to assume the light as falling in the direction ordinarily used in the projection of shadows. A scale of inches will be supplied to you if you require it.

12. Let a sphere be penetrated by a vertical right circular cone whose axis does not pass through the centre of the sphere, and let the positions of the sphere and cone be so chosen that the vertical plane passing through the centre of the sphere and the axis of the cone shall neither be parallel to nor perpendicular to the vertical plane of projection. Show how to find both the horizontal and the vertical projections of the intersection of the spherical and conical surfaces. This is a problem from the the Engineer's Drawing Book.

THIRD YEAR STUDENTS.

NATURAL PHILOSOPHY.—*Examiner, Professor Everett.*

1. Define acceleration. When a force of a pound acts upon a mass of a pound what is the acceleration produced? What is Gauss' invariable unit of force?

2. Show that the sum of potential and kinetic energies is constant for a falling body at all points of its descent, the resistance of the air being neglected.

3. What is the condition that a force and a couple may be equivalent to a single force? Determine the magnitude of this force and its line of action.

4. Prove that every rigid body has a centre of gravity, and write down (without proof) a formula for the x co-ordinate of the centre of gravity of a system, when the co-ordinates of the centres of gravity of all the parts of the system are given.

5. How can the periodic time of an inferior planet be deduced from observation?

6. Define the *dispersive power* of a substance, and describe a mode of accurately determining it experimentally.

7. How may plane polarised light be distinguished from ordinary light? How does the undulatory theory explain the conversion of plane polarised into circularly polarised light?

Appendix, No. 8.

Scholarship Examinations.

8. When a wire of resistance r_1 connects the poles of a battery, the strength of current is c_1, and when a wire of resistance r_2 is substituted the current is c_2. Supposing $c_1\, c_2\, r_1\, r_2$ known, find the resistance in the battery.

GEOLOGY AND PHYSICAL GEOGRAPHY.—*Examiner, Professor Wyville Thomson.*

1. Name some of the principal minerals of the Felspathic series, the rocks which they go to form, and the nature of the soils produced by their decomposition.

2. Describe and illustrate by diagrams the different kinds of faults.

3. Describe and illustrate by diagrams conformability and unconformability; denudation; a synclinal, and an anticlinal axis.

4. Name some of the principal rocks of the trachytic and doleritic series, and give their general composition.

5. Name, in descending order, the formations from the Upper Chalk to the Lias, and name the fossils characteristic of each.

6. Describe the structure and the mode of formation of a coral reef.

7. Name, and give the general geological structure of the principal mountain chains of the New World.

SURVEYING, LEVELLING, MENSURATION, &c.—*Examiner, Professor James Thomson.*

1. In a Y levelling instrument, or a Y theodolite, what is the relation, to be brought about between the axis of the cylindric rings on the telescope, and the line of collimation before the instrument is reduced to proper adjustment for use? In making your answer, you ought to bear in mind that it is very unlikely in any given instrument that the axis of the rings passes quite exactly through the centre of any lens of the telescope.

2. Describe the process of making a survey with the chain, or with the chain aided by a theodolite; and explain clearly how to compute the area of the entire land surveyed, and the areas of its several fields or other enclosures.

3. If a triangle is to be determined by measurement in the field of a side and two adjacent angles, and if the sum of those two angles be about equal to 90°, so that the third angle must also be about equal to 90°; find approximately enough for ordinary practical purposes how much the calculated length of each of the required sides will be vitiated (if practically vitiated at all), by an error of one minute in one of the two measured angles; the calculated side adjacent to that slightly inaccurate angle coming out by the calculation as being 2,963 links.

4. In surveying, how may two persons in a field, speedily, and without aid of a theodolite or other instrument, place themselves in the straight line between two inaccessible objects, or what is equivalent between two accessible objects when too much time would be lost by going to either? Vision of the objects is supposed not to be obstructed.

5. How may one person with the aid of a theodolite find accurately a point in the line between two distant objects without going to either; his vision with the theodolite from points in the line and near it not being obstructed?

6. What is a level surface when the earth's attraction and the centrifugal force due to its diurnal rotation are taken into account? What is a datum line, or a datum level? What is a reduced level? What is the formation line or the formation surface in railway work?

7. For computation of the quantity of earthwork along an entire cutting or embankment, whether will the ordinary prismoidal method or the method of "mean areas" give generally more correct results, and why? Also explain whether either of them has an advantage over the other in respect to giving means for taking sidelong slopes into account.

8. Explain what the two sets of tabular numbers in Bidder's earthwork table severally express; and how that table is used in computing quantities of earthwork. Also in Sir John Macneill's earthwork tables, what do the tabular numbers in the "First Series" and in the "Second Series" severally express, and how are the tables in these two series used?

9. Give a demonstration of the prismoidal formula for railway earthworks in the following form:—

$$\text{Content}=\frac{h+h'}{2}.bl+\frac{r}{3}(h^2+hh'+h'^2)l.$$

10. For the setting out of railway curves give a clear description or explanation of the method of ranging on the ground a circular curve of given radius tangential to two given straight lines, in a case in which Professor Rankine's method by angles at the circumference with a transversal is used. In this you are not expected to state or demonstrate any intricate formulæ; but you should point out what are the quantities required to be calculated for the determination of which formulæ are provided; and you should point out what are the measurements required to afford the requisite data.

11. On a plane surface shadows are cast, first, by a globe; and second, by a perfectly thin circular plate parallel to the plane surface. What will be the forms which the shadows may assume when the light proceeds from a point either at a finite or an infinite distance?

12. The accompanying diagram shows a conical surface of revolution intersected by a cylindrical surface of revolution, the axes intersecting each other at right angles. Draw out developments of both surfaces, showing very accurately the curved edges of the surface sheets when flattened; without allowance of such small addition as might in some practical cases be required as an overlap for soldering, &c.

13. In the sextant, state and prove what is the relation of the angle subtended at the observer's station between the two objects viewed and the angle between the two mirrors; and explain accordingly how the graduation on the arc is arranged.

MEDICAL SCHOLARSHIPS.—SECOND YEAR STUDENTS.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 10. State to which side of the body each belongs, and describe the characters of the markings on which your opinion is founded.

2. Describe the actions of the biceps, teres major, pronator teres, and peroneus longus muscles.

3. What are the precise relations of the articular surfaces of the astragalus with other parts? Describe the ligaments which retain the head of the astragalus in position.

4. Describe the varieties of epithelium, and state where each is to be found in the body. Name any structures, developed from epithelium, which are very unlike it, in the adult body.

5. Give a short account of fibrin, albumen, gelatin, and casein, and state where, and in what proportions, each of these substances may be found in the human body.

Appendix, No. 8.

Scholarship Examinations.

BOTANY.—*Examiner, Professor Wyville Thomson.*

1. Give the classification of fruits usually adopted. Mention examples.

2. Describe and illustrate by plans the following forms of vernation :— Conduplicate, circinate, and revolute.

3. Describe the campylotropal ovule, illustrating, by a diagram, the position of its different parts.

4. Describe and illustrate the characters indicated by the terms, Pleurorhizeæ, Notorhizeæ, and Orthoploceæ.

5. What are characters of the natural order Solanaceæ? Illustrate, by a diagram, their usual mode of inflorescence. What are the therapeutic properties of the order? Name some economic and medicinal plants belonging to it. State the geographical distribution of the Solanaceæ.

6. Describe the structure of the reproductive organs in the genus fucus.

ZOOLOGY.

1. Describe the principal modifications of the liver in the Invertebrate sub-kingdoms.

2. Describe the circulation in the ascidian mollusca.

3. What modifications in structure, form, and attachments, does the occipital bone present in the five vertebrate sub-kingdoms?

4. Describe minutely the shoulder-girdle in birds, with the attachments of its several parts.

5. What is the relative position of the os quadratum? In what vertebrate sub-kingdoms is this bone distinct, serving as a suspensor for the lower jaw?

6. What is the condition of the circulation, and what is the structure of the heart, in the shark, in the turtle, in the crocodile?

7. Describe the skeleton of the fore leg and foot of a bird.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. How is the amount of the latent heat of a vapour determined?

2. How is the spectrum of such a metal as iron observed, and in what way is the identity of its bright lines with certain dark ones in the solar spectrum established?

3. Describe in detail the synthesis of water by means of hydrogen and oxide of copper.

4. In what proportions are gases known to combine?

5. Describe the three varieties of phosphoric acid.

6. State, in symbols, the reaction when fluoride of silicon is passed into water.

7. Give an account of the hydrocyanic acid, and describe its tests.

8. How is sodium prepared, and what are its chief properties?

9. What are the tests for lime and magnesia?

10. Give an account of the compounds of lead and oxygen, and mention the characteristic tests for lead.

11. How is the arsenic acid prepared, and what are its properties?

12. Give an account of the alloys of tin and copper with one another.

13. Calculate the amount of alcohol and carbonic acid respectively which 100 grains of sugar-cane should yield by fermentation.

14. Calculate how many grains of acetic acid would be formed by the oxidation of 100 grains of pure alcohol.

15. Describe the artificial preparation of urea; state its composition and the action of heat upon it.

16. What are the distinguishing properties of strychnia, and how is it prepared?

17. Describe generally the derived ammonias, and illustrate your statement by examples.

THIRD YEAR STUDENTS.

PRACTICAL CHEMISTRY.—*Examiner, Dr. Andrews.*

1. How would you analyse a given quantity of common alum?
2. What are the blowpipe tests for the oxides of manganese, the oxides of iron, and the oxides of copper?
3. Give a full account of the method of determining the hardness of a water.
4. How would you determine the amount of phosphoric acid in wine?
5. How are citric and tartaric acids distinguished from one another?
6. What are the characteristic properties of the salts of bismuth and of antimony?
7. How would you analyse an alloy of silver, tin, and copper?
8. What are the tests for the oxides of mercury?
9. What is the action of oxidising agents upon uric acid?

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 10. State to which side of the body each belongs, and describe the characters of the markings on which your opinion is founded.
2. Describe the movements of the scapula in the living body, and mention the muscles which produce each movement.
3. State the attachments, relations, and action of the levator ani muscle.
4. Give an account of the development of the connective tissues.
5. Describe the modes of termination of sensory nerves as they are at present understood.

MATERIA MEDICA.—*Examiner, Dr. Seaton Reid.*

1. Name the preparations called Glycerines in the Pharmacopœia.
2. State the proportions of their ingredients, and the therapeutic properties of each.
3. Name our Antiperiodic Medicines.
4. Write a prescription for the internal use of each.
5. What is the dose of Strychnia?
6. What are the ingredients and dose of Liquor Strychnia?
7. In what way, and on what tissue, do astringent medicines act chiefly?
8. How are they classified?
9. Name the chief astringent principle furnished by vegetables, and the substances containing it in largest quantity.
10. What quantity of the Hydrochlorate of Morphia is in each of the Trochisi Morphia?
11. Name the medicines on the table, and classify them therapeutically.

FOURTH YEAR STUDENTS.

ANATOMY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 10, and describe the characters of the markings on which your opinion is founded.
2. What movements take place in each region of the spinal column, and how do they affect the parts of the articulations?
3. Describe the course and distribution of the obturator nerve and its branches.

Appendix, No. 8.

Scholarship Examinations.

4. Describe the method of examining and dissecting the intestines.

5. Describe the characters and mode of action of the tricuspid valve of the heart.

PHYSIOLOGY.

1. Describe the connective tissue of the brain, and that of the umbilical cord. Trace the derivation of each of the elements of these tissues in their development.

2. Describe the white corpuscles of human blood; mention the parts of the body in which you believe them to be formed, and the reasons for your belief.

3. What are the modes of connexion of nerves with ganglion cells, and with muscles?

4. What advantages do we gain by having two eyes rather than one? How do we see objects singly with two eyes, and under what conditions of the eyes does a single object appear double? In what way does the stereoscope cause us to see objects in relief, when two representations of them on a plane surface are presented to the eyes?

5. Contrast the functions of the cerebrum and spinal cord.

THEORY AND PRACTICE OF MEDICINE.—*Examiner, Professor Cuming.*

1. What are the causes of Anaemia, and what are the symptoms produced by it?

2. What is the period at which the following symptoms usually appear in a case of Typhus—Delirium, Headache, Stupor, Sleeplessness; and when is the eruption usually first observed?

3. What are the physical signs of Pneumonia in the stage of consolidation?

4. What are the signs and symptoms of Mitral Regurgitation?

5. What symptoms point to the existence of Renal Calculus?

6. How would you distinguish a case of Rosiola from one of Measles?

7. How may Jaundice from suppression be distinguished from that caused by obstruction?

1. How is Collateral Hyperaemia produced?

2. Give an account of the amyloid degeneration as it affects the liver, stating its external seat, its characters, and its pathological affinities.

3. Give the symptoms of paralysis of the seventh nerve, and its treatment.

4. How may bronchial respiration be caused, and in what does it differ from ordinary vesicular breathing?

5. How would you treat a case of Gastric Ulcer?

6. What are the characters of what is known as Cholera Typhoid?

SURGICAL ANATOMY.—*Examiner, Dr. Gordon.*

1. Describe the form presented by the knee-joint in acute synovitis, and give the reasons why it assumes that shape; and in what respects do the appearances presented differ from the swelling caused by other diseases?

1. Describe the structure of an artery, and mention the effects of the various agents used in the restraint of hæmorrhage upon each structure.

1. Describe the relations of the anterior tibial artery, and the operations for ligaturing it, in its upper, third, middle, and lower end.

Appendix, No. 8.

Scholarship Examinations.

1. Describe the tibio-fibular interosseous space, and how it is altered by the various fractures of the leg.

2. Describe the deformity caused by Pott's fracture of the leg, as exemplified by the specimen in the College Museum.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.—*Examiner, Dr. R. F. Dill.*

1. Define the terms abortion, miscarriage, and premature labour.
2. State the different theories which exist regarding generation.
3. What is menstruation?
4. How may menorrhagia be distinguished from menstruation?
5. State the cases of uterine hemorrhage in which plugging is objectionable.
6. What are the terms by which Baudelocque describes the varieties of vertex presentations?
7. Write a brief statement of a case of hydrocephalus acutus, including symptoms, treatment, and prognosis. What class of children is most liable to the disease?

MEDICAL JURISPRUDENCE.—*Examiner, Dr. Hodges.*

1. What are the means to be used for the detection of cantharides in the contents of the stomach?

2. State the symptoms produced by a poisonous dose of phosphorus, and the methods employed for the detection of that poison in the contents of the stomach, and in articles of food.

3. Describe the processes employed for the separation and identification of chloroform.

4. Give an account of the method employed in the examination of stains supposed to be produced by nitric acid.

5. What is meant by the terms *vagitus uterinus* and *vagitus vaginalis*?

6. What are the usual appearances presented by the skin when burned by corrosive liquids? How are these to be distinguished from ordinary burns and scalds?

LAW SCHOLARSHIPS.—FIRST YEAR STUDENTS.

REAL PROPERTY AND CONVEYANCING.—*Examiner, Professor Molyneux.*

1. What is the difference between a lease made for life as granted by a person seized in fee-simple, or by a person possessed of a term of 1,000 years, as regards its legal incidents?

2. A conveys land to and to the use of B and his heirs, to the use of C and his heirs; C executes a lease of the same land to D for life, against whom a former tenant of the land, under an expired lease, holds possession: whether must D resort to a Court of Equity or Court of Law to obtain possession? and state the reason.

3. Name a class of heritable *legal* estates in possession of which the wife was not dowable at Common Law?

4. In what events does an estate by the curtesy arise?

5. Estate tail; issue does not fail for a hundred years; upon whom does the estate devolve on such failure? and state what right.

6. In what respect did the act of a tenant for life prior to an estate tail sought to be disentailed, *before* the 3 and 4 William IV., *Irish*, or

Appendix, No. 8.

Scholarship Examinations.

the 4 and 5 William IV., *English,* differ from that prescribed by those statutes to a person similarly circumstanced in a like proceeding?

7. What is the difference as to tenure between a demise to A for life or 31 years if he shall so long live?

8. How does special occupancy arise?

9. What maxim of law created the necessity for establishing the rule of construction known as the "Rule in Shelley's case"?

10. Under what state of circumstances does merger arise?

11. When it is sought to unite a particular estate with the next estate in remainder, in what case is a release the proper conveyance, and in what a surrender?

12. What was the appropriate form of conveyance of a reversion before the 8 and 9 Vic., chap. 106?

13. Whence did executory interests derive their *legal* effect?

14. For what reason did the statutable provision admitting the half-blood to succession point out the difference in its application between the cases of the common ancestor being male or female?

15. What injustice did the Legislature seek to remedy by enacting that in a will the words "*die without issue*" shall be construed to mean a failure in the lifetime or at the death of the party, and not an indefinite failure of issue?

16. Are contingent remainders still destructible, and, if so, under what limitations, and with what exceptions?

17. In what particular is the husband's right of alienation of his wife's term of years limited?

18. What class of assurances operated by virtue of the statute of uses, and what otherwise?

JURISPRUDENCE.—*Examiner, Professor Leslie.*

1. What are, according to Lord Bacon, the causes of and the remedies for, uncertainty in the law?

2. "The introduction of the feudal law, so far from extending, may be regarded as an attempt to moderate the authority of the great allodial lords." (*Wealth of Nations,* Book III.) Explain this.

3. "Through the greater part of Europe, the commerce and manufactures of cities, instead of being the effect, have been the cause and occasion of the improvement and cultivation of the country. This order, however, being contrary to the natural course of things, is necessarily both slow and uncertain." Explain this.

4. On what grounds does Hallam contend that the peasantry of England were not reduced at the Conquest to the servile position in which the law books of a later period exhibit them.

5. State the changes in the descent of lands between the reign of Edward the Confessor and that of Richard I.

6. Point out the distinction between the original and the modern functions of an English jury.

7. Explain the ancient mode of trial by "compurgation," and the principle on which it was founded.

8. State the different significations of the term *law,* with examples of each.

9. What are, according to Austin, the distinguishing marks of sovereignty?

10. Why is International Law not "positive law"?

11. Under what circumstances would it become positive law?

12. What meaning do you give to the word Jurisprudence?

Appendix, No. 8.

Scholarship Examinations.

SECOND YEAR STUDENTS.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

1. Out of what portion of the assets of a deceased person is his mortgage debt payable as between the different classes of persons entitled to such assets?

2. In what way does a surrender in law of a lease arise?

3. In what respect does a conveyance for valuable consideration, but executed for the purpose of defrauding creditors, differ in its operation, as affecting the alienee, from a voluntary conveyance?

4. In what class of cases do instruments conversant about real property *inter vivos* fall within the rule "*equitas sequitur legem*" in their construction? And in what class are instruments construed by Courts of Equity without regard to that rule?

5. What is the nature of *equitable waste*?

6. What extended mode of relief, conferred by statute, and borrowed from procedure at Common Law, may now be administered by Courts of Equity.

7. On what principle is a mortgage given by a client to his solicitor for future costs held invalid by Courts of Equity?

8. From what different sources do Courts of Equity derive the principles on which they adjudicate in relation to real and personal property respectively?

9. Where conflicting parties have equal equities, and one of them the legal estate, which of them will prevail in a Court of Equity, and which of them will be favoured where neither have the legal estate?

10. What is the difference in point of equitable relief between a mortgage with the usual clause for reconveyance on payment of principal and interest on a given day, and a sale on condition of reconveyance on like terms on a day named?

11. Why does the law prohibit a settlement in favour of an unborn child?

12. What is the effect of notice of a prior conveyance where the conflict is between a volunteer and a purchaser for value; and what the effect of notice where both conveyances are voluntary?

13. Why do Courts of Equity entertain suits founded on lost bonds, although Courts of Law administer adequate relief in such cases?

14. What is the nature of the relief given by Courts of Equity on lost bills of exchange, recently brought within the jurisdiction of Courts of Law?

15. Give some instances which Courts of Equity deem as falling within the definition of *constructive fraud*?

16. When a Court of Equity sets aside a fraudulent sale after payment of the purchase money what terms does it impose on the plaintiff as a condition of relief?

17. Why do Courts of Equity deny relief in the case of mistake or fraud in the sale of goods, yet concede it when the sale is of lands?

18. In what instance is evidence of parol variation of a written contract admissible in a Court of Equity on the part of a plaintiff?

19. In what instance does *suppressio veri* not form a ground for setting aside a contract on the ground of fraud?

20. What, in contemplation of a Court of Equity is fraud on a marital right?

JURISPRUDENCE AND CIVIL LAW.—*Examiner, Professor Leslie.*

1. "Upon this subject (Jurisprudence) Dr. Adam Smith followed the plan suggested by Montesquieu; endeavouring to trace the gradual progress of Jurisprudence from the rudest to the most refined ages, and to

Appendix, No. 8. — Scholarship Examinations.

point out the effects of those arts which contribute to subsistence, and to the accumulation of property, in producing corresponding improvements or alterations in law or government." (*Life of Adam Smith*, by Dugald Stewart.) Cite examples of alterations and improvements in law, thus brought about by the natural progress of society, in both *English* and *Roman* Law.

2. Explain the distinction between the law of *real* and of *personal* property in English Law, and account for it historically.

3. Explain the distinction between *law* and *equity* in English Law, and account for it historically.

4. Give examples of distinctions in English Law, which have no existence in General Jurisprudence.

5. Give examples of distinctions in General Jurisprudence, which are not recognised in English Law.

6. Explain and criticise Blackstone's division of rights into "rights of persons" and "rights of things;" contrasting it with a celebrated division of Roman Law.

7. Explain the origin of the *jus gentium*, and its connexion with the *jus naturae*.

8. "Modern International Law, undoubted as is its descent from Roman Law, is only connected with it by an irregular filiation."—(*Maine's Ancient Law*). Explain this.

9. "Without the fiction of *adoption*, it is difficult to understand how society would ever have taken its first steps towards civilization."—(*Maine's Ancient Law.*) Explain this.

10. "The movement of progressive societies has hitherto been a movement from *status* to *contract.*" Explain this.

11. Explain the origin of the rule of English Law which formerly prohibited the half blood from succeeding to each other's lands.

12. "Why," according to Mr. Maine, "did Primogeniture supersede every other principle of succession" to landed property, in mediæval Europe?

THIRD YEAR STUDENTS.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

1. In what respect did the law relating to dower, and that relating to the curtesy differ before the 3 and 4 William IV., chap. ?

2. Why is it expedient that the mortgagor should be made a party to an assignment of the mortgage by the mortgagee to a third person?

3. What change has taken place in the law as to the fund out of which the mortgage debt of a deceased mortgagee is to be primarily discharged?

4. Original mortgage of an *equitable* estate *unregistered*; 2nd mortgage of like equitable estate in the same lands *registered*, with notice of prior mortgage; 3rd mortgage of the same lands with the *legal* estate *unregistered*, and without notice of either of the preceding mortgages; 4th mortgage without notice of any of the preceding mortgages. Estate sold. In what order will those four several mortgages rank on the distribution of the funds produced by the sale?

5. Acceptor, payee, and endorsee of a bill of exchange. The bill is dishonoured. What proofs will be necessary to maintain an action at the suit of the indorsee against the payee?

6. What are the requisites of the statute of frauds with reference to contracts for the sale of goods?

7. In what case, as provided by the 19th and 20th Victoria, chap. 97,

is it no longer necessary that the entire contract should be in writing, notwithstanding the statute of frauds; and what portion of it may now be so omitted?

8. What exceptions exist to the rule that choses in action are not assignable at law?

9. Joint bond by three persons passed to three persons. All the obligors die; two of the obligees die. In a suit to recover the debt, who are the proper parties?

10. In what cases of loss are common carriers discharged from liability at Common Law?

11. What acts of the creditors will discharge the surety; and why?

12. State in what instances can actions at law be maintained by partners *inter se*, in reference to matters arising out of the partnership, irrespective of the obsolete action of account.

13. In what case can an acceptor of a bill of exchange when sued by indorsee avail himself of facts connected with the bill between the drawer (being also indorser) and the plaintiff indorsing?

14. A being tenant under lease mortgages his interest by way of assignment. The mortgagee does not enter into possession. The landlord sues the mortgagee for rent accrued after the execution of the mortgage. Can the landlord recover? State the reason for the answer.

15. Action to recover a debt of £100. Two defences are set up; first, that the defendant paid the plaintiff £80 on condition that the plaintiff would accept that in full discharge of the debt; which plaintiff so accepted. And, secondly, that a third person had given the plaintiff his promissory note for £5, which plaintiff accepted in satisfaction of the entire demand of £100. Is either defence, or are both, valid in law? State the reason of the answer.

16. What is the limit within which an action for rent due on lease under seal may be brought, and what the limit where the demise is under parol?

17. A makes a lease to B; B assigns to C; rent accrues after the assignment; who is liable for that rent?

18. What are the several remedies at Law and in Equity respectively, for unpaid purchase-money after contract for sale of land where the purchaser has not entered into possession?

SENIOR SCHOLARSHIPS.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

FRENCH.

I.—Translate into French:—

The pretty fable by which the Duchess of Orleans illustrated the character of her son, the Regent, might, with little change, be applied to Byron. All the fairies, save one, had been bidden to his cradle. All the gossips had been profuse of their gifts. One had bestowed nobility, another genius, a third beauty. The malignant elf who had been uninvited came last, and, unable to reverse what her sisters had done for their favourite, had mixed up a curse with every blessing. In the rank of Lord Byron, in his understanding, in his character, in his very person, there was a strange union of opposite extremes. He was born to all that men covet and admire. But in every one of the eminent advantages which he possessed over others was mingled something of misery and debasement. He was sprung from a house,

Appendix, No. 8.
Scholarship Examinations

ancient indeed and noble, but degraded and impoverished by a series of crimes and follies which had attained a scandalous publicity. The kinsman whom he succeeded had died poor, and, but for merciful judges, would have died upon the gallows."

II.—1. State the critical questions raised by Voltaire with respect to dramatic composition, and exemplify his practice from his "Semiramis" and "Tancrède."

2. State the subject of Ponsard's *L'Honneur et l'Argent*, and show in what respects his manner of treatment differs from that of his predecessors.

3. Give a short account, in French, of Edmund About's *Roi des Montagnes*.

III.—1. Characterize the principal dialects of the *langue d'oïl*.

2. Comment upon the difference of gender in *le critique* and *la critique*, *un aune*, and *une aune*.

3. Explain the formation of the future in the Romance languages.

4. Explain the origin, uses, and meanings of the following suffixes:—*age*, —*erie*, —*ard*, —*ot*.

5. Criticise the ordinary arrangement of the conjugations in descriptive grammars of the French language.

GERMAN.

I.—Translate into German :—

> Pitt's admirers plead guilty on his behalf to the charge of not patronising men of letters. But patronage of men of letters was going out of fashion, and it was happy for literature that it was so. How can a statesman have leisure to discriminate literary merit? And if he cannot discriminate, how can we desire that he should patronise? Of course he can be told what writers are on his own side in politics, and he can see who flatter him in their prefaces; but this is not what learning or the public wants. A munificent despot, such as Louis XIV. may foster a court literature; a munificent party chief, such as the Whig leaders in the reign of Anne, may foster a party literature. A healthy literature needs no fostering but that of freedom. The best patron of intellect is an educated people.—Goldwin Smith.

II.—Translate into English :—

1. Gottfr. Aug. Bürger aus Molmerswende im Halberſtädt'ſchen war eine hochbegabte Dichternatur; aber ein unſittliches Leben, gedrückte Verhältniſſe, Armuth und Nahrungsſorgen, drei durch Leidenſchaft und Unbeſonnenheit zerrüttete Ehebündniſſe und Hang zu rohen Genüſſen zerſtörten ſeine Anlagen und ſtürzten ihn kummervoll und frühe ins Grab. Bürger beſaß alle Gaben eines Volksdichters; er erfaßte die deutſche Natur mit richtigem Takte, daher ſeine lyriſchen Gedichte, worin niedrig Komiſches mit innig Gefühlvollem verbunden erſcheint, großen Anklang fanden. Am ausgezeichnetſten und bekannteſten ſind ſeine nach ſchottiſchen Vorbildern verfaßten und zum Theil deutſchen Volksſagen entlehnten Balladen und Romanzen, in welchen die Einfachheit, Kraft und phantaſievolle Lebendigkeit mächtig ergreifen und hinreißen. Durch dieſe wurde er der Liebling des Volks, ſo hart auch Schiller über ihn urtheilte, durch ſeine Lenore gewann er die ganze Nation, und ſein wilder Jäger, des Pfarrers Tochter von Taubenheim, der Kaiſer und der Abt, das Lied vom braven Mann, Frau Magdalis u. a. ſind noch jetzt im Volke bekannter als die meiſten neuern Gedichte.—Mit Bürger und andern Mitgliedern des Göttinger Hainbundes befreundet war Leop. Fr. G. Göckingk, in der literariſchen Welt bekannt durch Epigramme, poetiſche Epiſteln und durch ſeine „Lieder zweier Liebenden" —Weber.

Appendix, No. 8.

Scholarship Examinations.

2. Schön iſt der Friede! Ein lieblicher Knabe
Liegt er gelagert am ruhigen Bach,
Und die hüpfenden Lämmer graſen
Luſtig um ihn auf dem ſonnigen Raſen;
Süßes Tönen entlockt er der Flöte,
Und das Echo des Berges wird wach,
Oder im Schimmer der Abendröthe
Wiegt ihn in Schlummer der murmelnde Bach—
Aber der Krieg auch hat ſeine Ehre,
Der Beweger des Menſchengeſchicks;
Mir gefällt ein lebendiges Leben,
Mir ein ewiges Schwanken und Schwingen und Schweben
Auf der ſteigenden, fallenden Welle des Glucks.
Denn der Menſch verkümmert im Frieden,
Müßige Ruh' iſt das Grab des Muths
Das Geſetz iſt der Freund des Schwachen
Alles will es nur eben machen,
Möchte gerne die Welt verflachen;
Aber der Krieg läßt die Kraft erſcheinen,
Alles erhebt er zum Ungemeinen,
Selber dem Feigen erzeugt er den Muth.

Schiller.

ITALIAN.

I.—Translate into Italian :—

The Conqueror and his descendants to the fourth generation were not Englishmen : most of them were born in France : they spent the greater part of their lives in France : their ordinary speech was French : almost every high office in their gift was filled by a Frenchman : every acquisition which they made on the Continent estranged them more and more from the population of our island. One of the ablest among them indeed attempted to win the hearts of his English subjects by espousing an English princess. But, by many of his barons, this marriage was regarded as a marriage between a white planter and a quadroon girl would now be regarded in Virginia. In history he is known by the honourable surname of BEAUCLERC; but, in his own time, his own countrymen called him by a Saxon nickname, in contemptuous allusion to his Saxon connexion.

II.—Translate into English :—

1. Quanto sia laudabile in un Principe mantenere la fede, e vivere con integrità e non con astuzia, ciascuno lo intende. Nondimeno si vedé per isperienza ne' nostri tempi, quelli Principi aver fatto gran cose, che della fede hanno tenuto poco conto, e che hanno saputo con astuzia aggirare i cervelli degli uomini, ed alla fine hanno superato quelli che si sono fondati in su la lealtà. Dovete adunque sapere come sono due generazioni di combattere : l'una con le leggi ; l'altra con le forze. Quel primo modo è degli uomini ; quel secondo è delle bestie ; ma perchè il primo spesse volte non basta, bisogna ricorrere al secondo. Pertanto ad un Principe, è necessario saper bene usare la bestia e l'uomo. Questa parte è stata insegnata a' Principi copertamente dagli antichi scrittori, i quali scrivono come Achille e molti altri di quelli Principi antichi furono dati a nutrire a Chirone Centauro, che sotto la sua disciplina gli custodisse ; il che non

Appendix, No. 8.

Scholarship Examinations.

vuole dire altro l'avere per precettore un mezzo bestia e mezzo uomo, se non che bisogna ad un Principe sapere usare l'una e l'altra natura, e l'una senza l'altra non è durabile.—MACHIAVELLI.

2. Il saggio Capitan con dolce morso
I desideri lor guida e seconda :
Chè più facil saria svolger il corso
Presso Cariddi alla volubil' onda,
O tardar Borea, allor che scuote il dorso
Dell' Apennino, e i legni in mare affonda.
Gli ordina, gl' incammina, e'n suon gli regge
Rapido sì, ma rapido con legge.

Ali ha ciascuno al core, ed ali al piede:
Nè del suo ratto andar però s'accorge.
Ma quando il Sol gli aridi campi fiede
Con raggi assai ferventi, e in alto sorge;
Ecco apparir Gerusalem si vede:
Ecco additar Gerusalem si scorge:
Ecco da mille voci unitamente
Gerusalemme salutar si sente.

TASSO.

HISTORY.—*Examiner, Professor Yonge.*

QUESTIONS.

1. Give a very brief account of the objects and chief incidents of Sir T. Wyatt's and the Duke of Norfolk's rebellions.

2. Give a slight sketch of the characters and careers of the Duke de Sully, and Lord Burleigh, Sir Walter Raleigh, and the Cardinal de Retz?

3. What was the French Parliament? And what was its conduct in the early part of the reign of Louis XIV., and in the last years of that of Louis XV.?

4. In England after the commencement of the Civil War, what attempts were made at reconciliation? What member of the Puritan party in the House of Commons was most conspicuous for his efforts in the cause of peace? And on what points did the negotiations chiefly or ostensibly turn?

5. What were the objects and fate of the Exclusion Bill, and the Peerage Bill?

6. What were the principal acquisitions of territory made by France after the accession of Louis XIV.?

7. What were the original causes of the War of the Succession, what was its result, and what was the principal consideration which led the Government of England to acquiesce in the arrangement by which it was terminated?

8. Give a sketch of the political career of the first William Pitt (Earl of Chatham), and in what especial instance was his policy influenced merely by the principles of opposition to France.

SUBJECT FOR ESSAY.

THE INFLUENCE OF THE INVENTIONS OF THE 14TH AND 15TH CENTURIES ON CIVILIZATION.

Appendix, No. 8.

Scholarship Examinations.

Natural Philosophy.—*Examiner, Professor Everett.*

MATHEMATICAL PHYSICS.

1. Investigate the attraction of a thin uniform spherical shell upon an external point.

2. A material point of mass m, oscillates in a straight line under the influence of a force which varies directly as the distance. Find its kinetic energy at the instant of passing through the centre of force.

3. Prove the principle of virtual velocities for the case in which all the forces act at one point.

4. Enunciate Guldinus' theorems.

5. Equal forces act upon unequal masses (1) for equal times, (2) through equal spaces. State, in each case, what relation will subsist between the velocities generated.

6. Prove that for a compound pendulum

$$\frac{d^2\theta}{dt^2}=\frac{G}{\mu}$$

G denoting the moment of applied forces about the axis, and μ denoting Σr^2dm.

7. Investigate the distance from a convex lens at which a small object should be placed, in order that an eye close behind the lens may see its image at the distance of most distinct vision; and find an expression for the magnifying power thus obtained.

EXPERIMENTAL PHYSICS.

1. Explain the strengthening of sound by resonance.

2. Describe the siren, and its use for determining the rapidity of vibration corresponding to a note of given pitch.

3. Enunciate the Cartesian law of refraction, and give the explanations of it, according to the two theories of the nature of light.

4. How can the magnetic dip be found when the vertical and horizontal intensities are given? Describe also the mode of directly observing the dip, and show how errors in the position of the centre of gravity of the needle may be eliminated.

5. Describe the electrophorus, and explain its action.

6. Give a brief account of the two theories which have been proposed to account for electrical attractions and repulsions. How do you account for the attraction of an unelectrified pith ball by an excited glass rod?

7. Describe Coulomb's torsion-balance, and the mode of using it to determine the law of electrical attraction as depending on the distance.

8. Enunciate Ohm's law; and show that when the resistance in the connecting wire is very great, the current is nearly proportional to the number of cells, but that when this resistance is very small the current is nearly as strong with one cell as with many.

Political Economy.—*Examiner, Professor Leslie.*

1. Suppose an invention by which sufficient heat for all purposes of manufacture, locomotion, and use, could be obtained from the sun without cost, what would be the *immediate* effect on the amount of national wealth in the technical sense?

2. What changes in the relative prices of commodities would ensue?

3. How would the invention create a new demand for commodities, and a new demand for labour to produce them

4. Coal miners and other labourers, thrown out of work by the inven-

tion, would, on obtaining new employment at an equal rate of wages, be better than before?

5. On what condition affecting the production of the precious metals would the future prices of things *produced without the aid of heat or technical power* depend?

6. The purchase of some commodities leads to a greater expenditure of capital in wages than the purchase of others does; why?

7. Prove the fallacy of the notion that it is for the good of trade, and of the labouring classes, that the court and the rich should spend great sums on a variety of costly dress, on balls, and on powder and shot.

8. State and criticise Adam Smith's theory of rent, pointing out how far he was right.

9. State and criticise Mr. Senior's theory of the rate of wages.

10. State Mr. Mill's theory of the rate of profit, with any objections to it which you think important, and any answers which you think those objections open to.

11. State Mr. Mill's theory of international values.

12. How do you account for the high rate of wages in the United States?

---

1. What is the cause of the great demand for cash and bank-notes in a panic?

2. Suppose half the metallic currency of Great Britain to disappear suddenly and irrecoverably—

(*a*) What classes would be gainers?
(*b*) How would the foreign trade of Great Britain be affected?
(*c*) What kind of loss would the nation sustain in the end?

3. A sudden increase in the quantity of money tends to raise or to lower the rate of interest, according as it enters—

(*a*) The market of commodities?
(*b*) The money market?

4. What was the fallacy in Locke's doctrine respecting the ultimate effect on the rate of interest of a fall in the value of the precious metals?

5. State the reasons for which the State ought or ought not, in your opinion, to undertake the business of railway carriage.

6. (*a*) What is the distinction made by Mr. Mill, at the beginning of his second book, between the laws of production and those of distribution?

(*b*) Make any comment you think this distinction calls for.

7. At the beginning of his third book, Mr. Mill speaks of having postponed, until then, the subject of Exchange and Value. Has it been entirely postponed until then, or not, in your opinion, and why?

8. Does continued emigration of labour from a country of low, to one of high wages necessarily equalize wages in both in the end, or not, and why?

9. What is the incidence of a tax on new and old houses respectively, and why?

10. Masters must pay a special tax on domestic servants; but domestic servants must pay the taxes on their own tea and sugar; why?

11. Point out the economic truth in the saying, "Up, corn—down, horn;" and show the consequent injury to English husbandry of protective duties on corn.

12. Show, by reference to the causes on which an increased cost of producing food depends, that Mr. Senior has erroneously concluded that a diminished consumption MUST be followed by a diminished cost of production, which will, therefore, partly compensate consumers for the tax.

Appendix, No. 8.

Scholarship Examinations.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What is the influence of pressure upon the freezing point of a liquid?
2. Describe the spheroidal state, and mention the principal facts observed regarding it.
3. Describe the spectra of potassium, cæsium, and rubidium; also of magnesium, strontium, and barium; state also how the bright sodium line can be converted into a dark one.
4. How is peroxide of hydrogen prepared, and what are its properties? How would you distinguish it from ozone?
5. Mention the more important bodies formed in the destructive distillation of coal.
6. What are the chief properties of ethylamine, biethylamine, and triethylamine, and how are they prepared?
7. How is glycol prepared, and state why it is regarded as a diatomic alcohol.
8. How is the atomic weight of an organic alkali determined?
9. What is Faraday's law of electrolysis?

NATURAL HISTORY.—*Examiner, Professor Wyville Thomson.*

BOTANY.

1. State what is known as to the process of impregnation in flowering plants, and describe the changes which take place from the period of impregnation till the seed reaches maturity.
2. Describe in detail the flower and the fruit of the apple.
3. Describe the different parts of a perfect stamen and state their homologies and functions.
4. Describe the structure of the flower in the orchideæ; and give an account of a few of the modifications of the process of impregnation which obtain in that order.
5. Give in detail the characters of the natural order cyperaceæ, and state the properties, uses, and geographical distribution of the plants of this order.
6. Give a detailed account of the process of reproduction in one of the marsileaceæ.
7. What natural orders of plants attain severally their maximum development in Australia, in South Eastern Europe, in Spain, in the southern portion of North America, on the Andes, and in the north of China?

ZOOLOGY.

1. Describe the structure, habits, and mode of reproduction of the Gregarinæ.
2. Give an outline of the anatomy of the earth worm and distinguish structurally an earth worm from one of the typical dorsibranchiate annelids, and from one of the typical tubicolous annelids.
3. Give a general sketch of the classification of the mollusca, indicating the structural peculiarities upon which it is founded.
4. Give the principal characters which distinguish the Holothuridea from the Echinidea. Describe the habits, economic uses, and general geographical distribution of the Holothuridea.
5. Describe the principal modifications in form and in attachment of the several bones of the face in the five classes of vertebrates.
6. Describe the structure and relations of the *chorda dorsalis.* State the mode in which it is usually modified and almost obliterated during the process of growth, and mention cases in which it is permanent.
7. Describe the early stages in the development of the vascular system in mammalia.
8. What is the nature of the modification which produces the obliquity of the head in flounders.